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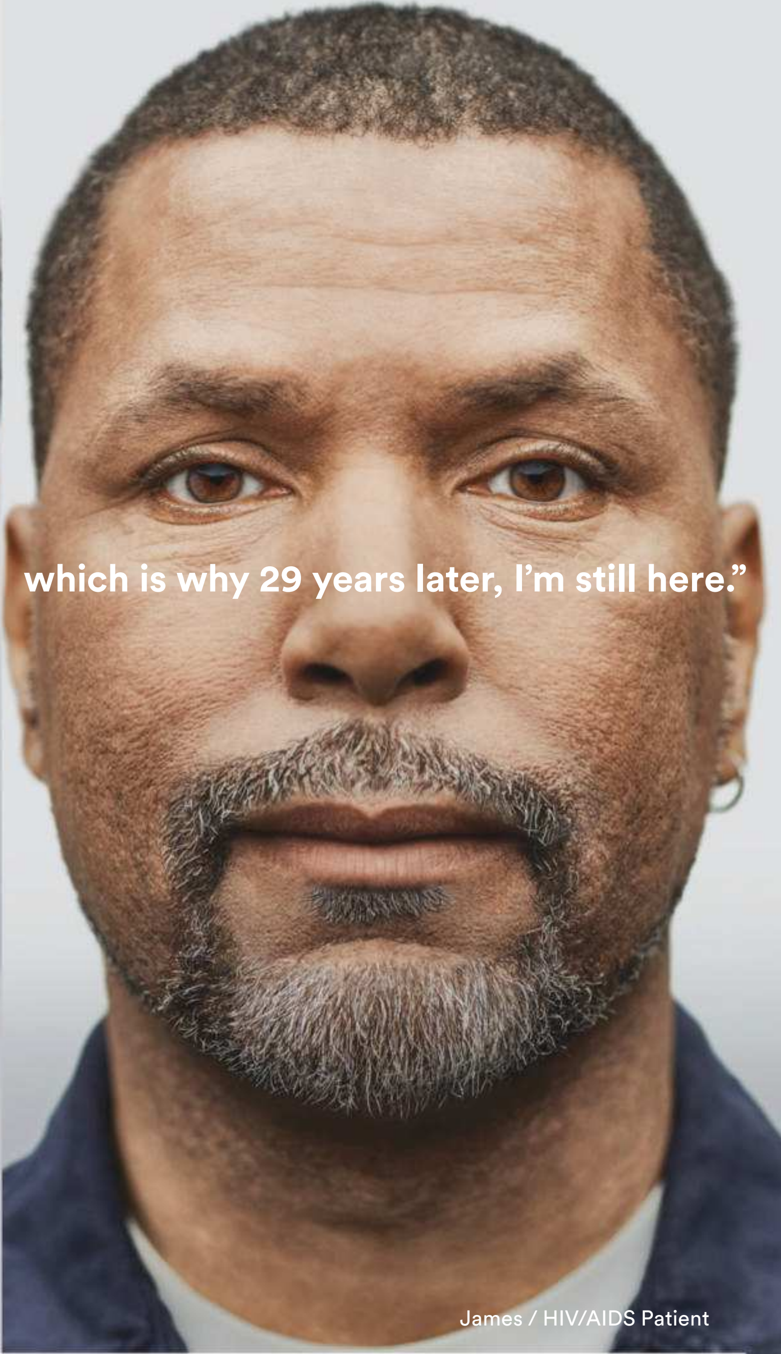

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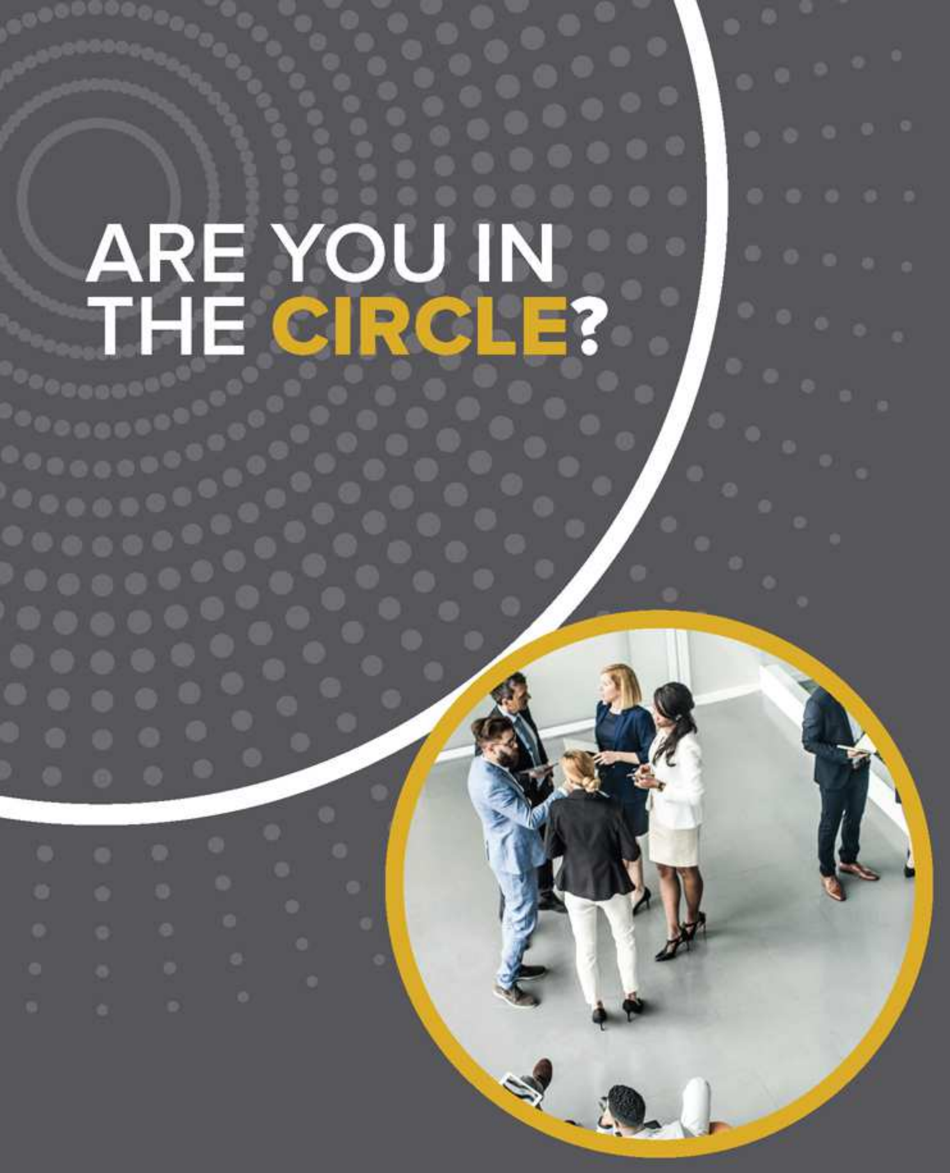

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FROM THE EDITOR

THE CEO VS. THE CLOCK

HBR staffer Ramsey Khabbaz with Adi Ignatius

The demands and complexity of leading a company are mind-blowing. A CEO oversees both functional and business unit agendas and answers to a multitude of constituents—shareholders, customers, employees, the board, the media, the government, and the community. And because CEOs aren't robots, they also need to make room for family, friends, exercise, and other nonwork interests. There aren't enough hours in the day.

How a leader spends his or her time is telling. "A CEO's schedule (and indeed, any leader's schedule), then, is a manifestation of *how* the leader leads and sends powerful messages to the rest of the organization," write Michael Porter and Nitin Nohria in "How CEOs Manage Time" (page 42). The authors, whose ongoing 12-year study of CEO time use is the most detailed and comprehensive of its type, contend that "the way CEOs allocate their time and their presence—where they choose to personally participate—is crucial, not only to their own effectiveness but to the performance of their companies." Every calendar decision can enhance or diminish the CEO's legitimacy.

How should leaders think about this? Porter and Nohria recommend that they create personal agendas and make them explicit to the organization. Without that kind of planning and broad communication of intent, leaders can easily get distracted by the latest crisis or the loudest voice and never get around to the most important work. Indeed, if corporate strategy expresses itself in the allocation of resources, then leadership strategy must account for the CEO's scarcest resource—time. The CEO's success—along with the company's—depends on it.

ADI IGNATIUS, EDITOR IN CHIEF

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Kristie Rogers never thought she'd wind up in a state prison, but she found herself there on a daily basis while researching Televerde, a B2B marketing firm staffed by female prison inmates. An assistant professor at Marquette University, Rogers was curious about why employees so often tell researchers they don't feel respected at work. This pushed her to explore the dynamics of respect in a place where they would stand out—a company whose workers are also inmates.

62 FEATURE
Do Your Employees Feel Respected?

"Breakthrough technologies rewrite rules and customs and are sometimes celebrated, even vilified," says **Tarun Khanna,** a professor at Harvard Business School. "In creating my own ventures that coexist in the U.S. and Asia, I realized that the vacuum in rules and customs in which breakthrough technologies operate share the limited-rules environments of fast-growing emerging markets." Pioneering innovators in the emerging markets, he concludes in his article in this issue, have much to teach tech leaders about building the institutions that will allow their businesses to succeed.

86 FEATURE
When Technology Gets Ahead of Society

When **Richard D'Aveni** was finishing his 2012 book on Asia's growing advantage in manufacturing, he began to wonder whether emerging technologies such as additive manufacturing, also known as 3-D printing, might reverse the shift. "I found all sorts of strategic implications, not just geopolitical ones," says D'Aveni, the Bakala Professor of Strategy at Dartmouth's Tuck School. His latest article explores the new business models that recent technological advances are making possible.

106 FEATURE
The 3-D Printing Playbook

As the manager of a research consortium of 70 organizations, a professor at Babson College, and a husband, father, and community member, **Rob Cross** struggles daily with collaborative overload. For his article in this issue, coauthored by Scott Taylor and Deb Zehner, he used some of his favorite tools—network analysis and in-depth interviews—to develop solutions for those struggling with the same problem. "We can decide whom we engage with and how to interact with them," Cross explains. "The idea is to thrive at work—not just survive it."

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Collaboration Without Burnout

As HBR's photo editor, **Andrew Nguyen** spends his days distilling complex ideas into 2-D visual concepts. To capture the idea that diverse teams make better investment decisions, he says, "I immediately thought of a jawbreaker. The outside is rock solid and smooth, but when you break it down, it's so much more layered and colorful."

72 FEATURE
The Other Diversity Dividend

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VOLUME 96, NUMBER 4
JULY–AUGUST 2018
Printed in the U.S.A.

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AGILE AT SCALE

HBR ARTICLE BY **DARRELL K. RIGBY, JEFF SUTHERLAND,** AND **ANDY NOBLE,** MAY–JUNE 2018

When implemented correctly, agile innovation teams almost always result in higher productivity and morale, faster time to market, better quality, and lower risk than traditional approaches can achieve. What if a company were to launch dozens, hundreds, or even thousands of agile teams? Could whole segments of the business learn to operate in this manner? As enticing as such a prospect is, turning it into a reality can be challenging. Companies often struggle to determine which functions should be reorganized into multidisciplinary agile teams and which should not. And it's not unusual to launch dozens of new agile teams only to see them bottlenecked by slow-moving bureaucracies.

Perhaps the reason the authors see agility mostly in this one area is that many organizations are so limited by their hierarchical systems that they cannot implement the necessary changes. Business agility requires the integration of people and systems regardless of how or where data, knowledge, and tasks are held. The acronym OODA, used among fighter pilots, means to observe, orient, decide, and act. This can be applied in the business context. In order to make a business agile, we *observe* that business is hampered by cumbersome systems that no longer serve us. We *orient* ourselves to apply a repeatable, dynamic neurosystem that incorporates all data sources. We *decide* on a course of management, and we *act* to allow users to task the responsible parties, guide business flow, pivot as needs change, track and analyze results, and incorporate repeatability.
Moe Jafari, CEO, Coras

Although agile and scrum seem most applicable to product teams, suppliers and vendors can also benefit enormously from an agile workflow. Additionally, an agile and thoroughly aligned "customer success" team will have a much more profound impact on a business's clients than a monolithic and hierarchical organization will.
Mirko Grewing, customer success delivery manager, Backbase

I'm curious about the challenges in practicing agile methods faced by teams that are not colocated, given the trend toward distributed, global teams. Distributed agile teams need to overcome physical distance to create spontaneity, drive innovation, and build trust.
Claire Nielsen, marketing manager, Sococo

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7 TRAITS OF SUPER-PRODUCTIVE PEOPLE

HBR.ORG ARTICLE BY **JACK ZENGER** AND **JOSEPH FOLKMAN,** APRIL 20, 2018

Is there someone on your team who seems unusually productive? Someone who gets a huge amount done—without working longer hours? According to an analysis of some 7,000 workers, super-productive people are really good at doing seven things: setting stretch goals, showing consistency, building their knowledge and expertise, driving for results, anticipating and solving problems, taking initiative, and being collaborative. They might seem to get their work done through magic (or cutting corners), but they actually rely on this set of skills, which more of us can acquire and use.

> Super-productive folks may require reminders to slow down when working with colleagues who aren't operating at the same pace.
> —GLENN A. HOLSTEN

With the increasing accessibility of information and connectivity across geography and language, employees have greater potential for productivity. Super-productive employees are game changers. I look for their traits when recruiting new staff and developing existing talent to solve business challenges. However, in group collaborations, these folks may require gentle reminders to take a step back, slow down, and work with colleagues who aren't operating at the same pace.
Glenn A. Holsten, global head, biologics supply chain operations, AstraZeneca

In my experience, super-productive people also have the ability to focus on one thing for longer periods of time than most people without being distracted (with the exception of being interrupted by other people, meetings, and so on). This focus combined with stretch goals is a large factor in their unusual productivity.
Claire Everett, national quality coordinator, Prosegur

I would have liked to see some of the data supporting these conclusions. Although the article does home in on many of the traits that appear to be important, it doesn't explain the "coder insight," which is a given throughout Silicon Valley. Great coders don't just have focus—there is something else at work. Intelligence? A connect-the-dots ability? It's a kind of insight that makes these folks

HBR SURVEY

A controversial policy directive comes out of a government agency. How soon should a company or CEO take a stand on it?

SOURCE @HARVARDBIZ TWITTER POLL, MARCH 21, 2018

even more unusual than other super-productive employees.
Joel Miller, president, Customer Vineyard

HOW TO LOSE YOUR BEST EMPLOYEES

HBR.ORG ARTICLE BY **WHITNEY JOHNSON,** APRIL 20, 2018

You want to be a great boss. You want your company to be a great place to work. But right now, at this very moment, one of your key employees might be about to walk out the door. She has consistently brought her best game to work and has grown into a huge asset. But her learning has peaked, her growth has stalled, and she needs a new challenge to reinvigorate her. As her boss, you don't want anything to change. After all, she's highly productive, her work is flawless, and she always delivers on time. You want to keep her right where she is. Unfortunately, that's a great way to lose her forever. The best bosses figure out how to keep their employees constantly learning—finding them new assignments, new challenges, even new roles elsewhere in the company—in order to keep them engaged.

This article is very interesting, but the proposed solution is hard to implement. Look at technical roles where the current function still has to be done and there are few, if any, people with the skill set needed to fill the void if roles change. That is a challenge even for midsize organizations. I'd like to hear more about avoiding burnout in those kinds of niche jobs with specialized skill sets.
Mark Ryan, Denver, CO

The author responds: *It's a great question. When people have deep domain expertise—as with a brain surgeon or an aerospace engineer—you don't see a lot of role hopping. But there are still ways to simulate this. New projects. New configurations of teams. New clients. New geographies. New bosses. There are always ways to make work fresh, even within the constraints of the domain.*

This is exactly how I feel about my current job. There is a great need for employees in my department and a severe shortage of employees overall. I love my job, and I am good at it. But I'm beginning to feel the burnout. I want to grow and move forward in my career. But my boss makes it clear that she likes me where I am. Now I find myself wanting to seek a career change elsewhere.
Shannon Nealey, STNA, Atlas Healthcare

The author responds: *Your experience is one that millions of people around the world are experiencing—thank you for sharing this. Before you decide to leave your company, you may want to talk this through with your boss. If you have a good relationship, she might begin to see things from your point of view. Consider it.*

EDITOR'S NOTE: The May–June 2018 feature "Marketing in the Age of Alexa" mistakenly listed a coauthor. The author of the article is Niraj Dawar.

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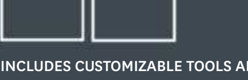

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Idea Watch

FINDING THE PERFECT PACE FOR PRODUCT LAUNCHES 20
Don't spread yourself too thin. *Plus* The dark side of gratitude, the stickiness of consultants' interventions, proof of the Peter Principle, and more

DEFEND YOUR RESEARCH 30
Women Benefit When They Downplay Gender

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The CEO of Levi Strauss on Leading an Iconic Brand Back to Growth

JULY–AUGUST 2018

Take time to learn from your last product launch before firing off another.
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ILLUSTRATION BY FAUSTO MONTANARI

BETTER SPACING IMPROVES LEARNING.

FINDING THE PERFECT PACE FOR PRODUCT LAUNCHES

Early this fall, if tradition holds, Apple will introduce one or more new iPhones—an unveiling that's among the year's biggest events in consumer electronics. The smartphone helped make Apple the world's most valuable company, even though Samsung and other rivals introduce new products much more frequently. That paradox led V. Kumar, a marketing professor at Georgia State University, and his colleagues Amalesh Sharma and Alok Saboo, to wonder: If a company wants to maximize shareholder value, what's the optimal number of new products to launch in a given time frame? Does it matter whether the launches are spread out or bunched together, and whether a new product is similar to the rest of the company's current product portfolio?

Managers don't need an academic study to recognize that launches take a toll on many parts of a company, from design and development to manufacturing and marketing. Firms that launch many new products incur high costs, which may hurt stock returns. (Indeed, it's not uncommon for companies announcing disappointing earnings to blame product launches.) And clustering launches can stretch people and systems too thin. But on the basis of previous research into how companies can quickly incorporate learning from product launches, Kumar's team believed its questions involved more than just costs and resource constraints. "Firms introducing products at a rapid pace have little time to evaluate their products, learn from them, assimilate their experiences, and deploy them to commercial ends," they write. In theory, optimal pacing allows firms to use the lessons from one launch to improve subsequent ones, which should boost shareholder returns. And if that's true, the researchers believed, they could prove it empirically.

To do so, they looked to the pharmaceutical industry, where new products are especially important to growth in revenue and market value. Using various databases and studying 73 publicly traded U.S. firms from 1991 to 2015, they identified when each of 1,904 new drugs was introduced. They then calculated the pace of the launches (the average number of products introduced over a period of time) along with the irregularity in pacing (the variance in timing between launches). They also looked at whether each new drug fit into a therapeutic class and treated a specific ailment already represented in the company's product portfolio or whether it was outside the firm's existing scope. They gathered data on company stock prices and compared the returns to industry benchmarks. To isolate the effect of product launches, they controlled for a host of variables, including the strength of each firm's patents, whether the new product faced competition, the media attention paid to the launch, and each firm's size, age, and financial health.

The results largely confirmed the researchers' hunches. Firms that launched many new products saw their increase in value diminish over time, as did those introducing products just loosely related to their current offerings. Companies whose launches came at irregular intervals did worse than the industry average: They saw their market value fall, and the drop was greater in the case of complex products and for firms with large R&D budgets relative to their marketing budgets (a high ratio of R&D to marketing may signal that a firm is more focused on innovation than on sales). "Our results indicate that there is an optimal level of pace and scope of product introductions that managers must consider," the researchers write. "Managers need to spend time learning from the products

IN PRACTICE

ELLEN DONAHUE-DALTON

“IF YOU DO TOO MANY PRODUCTS TOO QUICKLY, YOU GET THE PEANUT BUTTER EFFECT—YOU’RE SPREADING IT TOO THIN”

Launching a product requires close choreography between product development and marketing, so there are benefits to maintaining a careful pace and rhythm. HBR recently spoke with Ellen Donahue-Dalton, executive vice president and chief marketing and customer experience officer at Medecision, a population health management software company based in Dallas, about new research on the importance of those factors. Edited excerpts follow.

Why is this research relevant to your work? We’re coming off an 18-month period in which we launched 10 new products. That’s two or three times as many as we’d typically launch in that time frame. So we’ve been thinking a lot about the pace and regularity of product releases, the resources required, and how to learn from each launch.

What determines when to launch a product? We release new software multiple times each year, and many of our launches are tied to the annual industry conference or our annual customer forum. When we think about pace, the biggest issue is our customers’ ability to absorb new products. We mostly offer workflow automation software, and the impact on our clients of adding a new product is significant: Customers have to change extensive operational processes and train staff members. Health care is highly regulated, so there are important compliance and reporting considerations, too. Our software really has to be ingested by an organization, and we consider that when pacing our launches.

Has the research influenced how you think about recent launches? In retrospect, I would have slowed them down and spaced them out a little more. It’s less a matter of product development’s not having the ability to get new apps out and more about creating customer intimacy before and after the launch and not exhausting our marketing resources. If you do too many products too quickly, you get the peanut butter effect—you’re spreading it too thin.

How much can you really learn from one launch to the next? For a product to be compelling to our clients, it has to reduce costs, significantly enhance operational efficiency, satisfy clinicians and consumers, and/or improve clinical outcomes. We can listen to customers all day long during product development, but until a product is in operation, we can’t measure the improvements or savings—and to get successful market uptake, we have to do a really good job of proving that value will be delivered fairly quickly. For us, that’s the learning. It’s a highly iterative process.

How hard is that to measure and prove? It requires a lot of customer engagement with each launch. One thing I realized while reading the research is that we’ve been launching so many new products, often bundled, that it is difficult to distinguish the critical factors driving success. For instance, if we prove that an application provides value to one client, how similar does a new client have to be for that proof to hold true? We’ve bundled a lot of costs and resources into our recent launches. Going forward, I want to look at how a slimmed-down product-launch cadence can succeed.

PHOTOGRAPHY BY TREVOR PAULHUS

CONTINUED FROM PAGE 20

they have already introduced and incorporate these insights into their subsequent products."

This research doesn't specify exactly how a particular firm can calculate the optimal pace, spacing, and scope of its launches. But it does provide statistics and equations that can help managers understand whether a different pace might increase value. More important, it provides evidence that an optimal pace exists and that firms should be wary of exceeding it. The researchers also offer some estimates of the significant gains in value that can be realized by establishing a more rational cadence of product introductions. For example, their calculations suggest that the average firm in the study—one with a market value of $5.6 billion—could increase its market value by $702 million if it reduced the irregularity of its launches by 10%. The study puts a spotlight on the importance of process research in launching products, not just in developing them.

Kumar recognizes that managers face numerous pressures—from investors, customers, the media, and competitors—to introduce products faster. But he says the perceived need for speed is often misguided. "Our study highlights the importance of looking at the entire portfolio instead of focusing only on the next product," he says. It's also a mistake to focus too much on when competitors will launch products. Kumar likens companies that launch a product quickly in the hope of beating competitors to investors who try to time the market—which, research has shown, usually backfires. "There's something to be said for spacing out launches," he says. "You need to make sure you've learned enough from the last one and that you're not constrained by lack of resources."

HBR Reprint F1804A

ABOUT THE RESEARCH "Investigating the Influence of Characteristics of New Product Introduction Process on Firm Value: The Case of the Pharmaceutical Industry," by Amalesh Sharma, Alok Saboo, and V. Kumar (*Journal of Marketing,* forthcoming)

MARKETING
CUSTOMER COMPATIBILITY DRIVES SATISFACTION AND PROFITS

In theory, a retail bank's branch should be well equipped to serve customers seeking a wide array of transactions, from depositing checks to wiring funds to buying a money order. But a series of three studies suggests that this strategy has a downside. In one, researchers looking to understand the drivers of customer satisfaction examined 58,294 face-to-face banking transactions, finding that nearly a quarter of the variance in satisfaction derived from differences among customers (rather than, say, factors relating to employees or location). To parse those differences, the researchers analyzed the customer satisfaction evaluations submitted by 149,389 people interacting with 166 banks over a period of five years. They learned that the further a customer deviates from a branch's typical client, either in terms of demographics or in the type of transaction performed, the lower his or her satisfaction. The final study showed that these differences can hurt the bottom line: Branches with highly divergent customers had significantly lower rates of deposit growth and profits than more-homogeneous branches of the same institution.

Traditionally, managers who hope to boost customer satisfaction focus on employee training or infrastructure and process improvements, but this research shows that "customer compatibility"—the fit between the needs of individual customers and the branch's ability to meet them—is an important driver of satisfaction and that a diverse customer base is inherently challenging in that regard. The researchers suggest that customer compatibility can be proactively managed by segmenting services, being transparent about the types of customers the business is best suited to serve, and designing offerings that can easily be customized for varying needs. "Firms may have a limited ability to... control satisfaction without first addressing fit within their portfolio of customers," they say.

ABOUT THE RESEARCH "The Customer May Not Always Be Right: Customer Compatibility and Service Performance," by Ryan W. Buell, Dennis Campbell, and Frances X. Frei (working paper)

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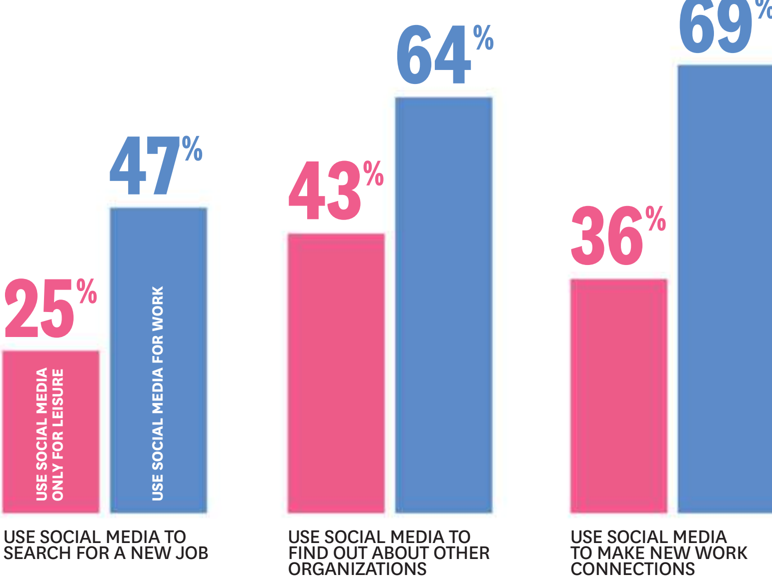
DECISION MAKING

THE RISK OF HAVING EMPLOYEES USE SOCIAL MEDIA FOR WORK

Social media is a powerful communication tool, helping employees share ideas, solve problems, and garner attention for a company's goods and services. But it can come at a cost: People using social media in their jobs get more exposure to other job opportunities and have higher profiles among recruiters, making them potential targets for poaching. A survey of 277 employees of a health care organization found significant differences in attitude and behavior between employees who use social media for work and ones who don't. Results for both groups are shown below. ■

SHARE OF RESPONDENTS WHO...



SOURCE LORENZO BIZZI

COUNTRIES WHOSE CITIZENS USE LOTS OF EMOJIS ON FACEBOOK REPORT HIGHER LEVELS OF "NATIONAL HAPPINESS" THAN OTHER COUNTRIES, AND THE WIDER THE RANGE OF EMOJIS, THE GREATER THE NATIONAL HAPPINESS.

"AMOUNT AND DIVERSITY OF DIGITAL EMOTIONAL EXPRESSION PREDICTS HAPPINESS," BY LAURA VUILLIER ET AL.

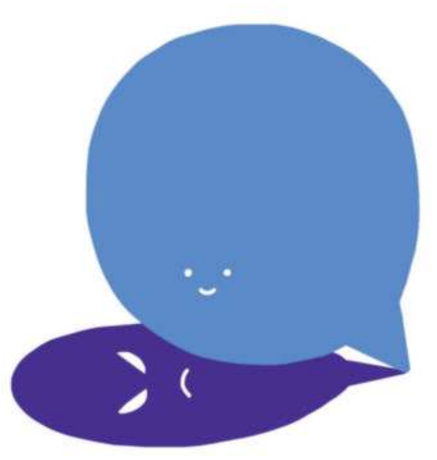
NEGOTIATION

THE DARK SIDE OF GRATITUDE

Positive psychology research extols the benefits of expressing gratitude, to the point that some experts advise keeping a daily "gratitude journal." But in one setting, this positive emotion can backfire: during competitive interactions. Researchers conducted five experiments to learn how people respond when their counterparts voice thanks in the midst of negotiations. In one—a computer simulation in which participants acted as buyers negotiating the price of a backpack—those whose first bid elicited grateful comments along with the seller's counteroffer ("Thanks for your offer of $60!!! This is really great") made lower second bids than participants who received neutral comments ("Got your offer of $60...here's my counteroffer"). In another, subjects played the role of a landlord looking to rent out an apartment. Those whose first offer was countered with gratitude made more-aggressive second offers than those whose potential tenant responded neutrally. Subsequent experiments showed that expressions of gratitude signal that a negotiator is likely to be forgiving and that counterparts' responses often extend to cheating and deception.

"Individuals would benefit from thinking more deliberately and strategically about expressing gratitude" in competitive contexts, the researchers say. It's fine to *feel* grateful if your counterpart makes a concession, they add, but you should save any actual thank-yous until a signed agreement is in hand. ■

ABOUT THE RESEARCH "Thanks for Nothing: Expressing Gratitude Invites Exploitation by Competitors," by Jeremy A. Yip et al. (working paper)



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COMMUNICATION
TALKING LIKE YOUR INTERVIEWER CAN GET YOU HIRED

Hiring managers often try to determine whether a candidate will "fit in" with the company's cultural norms, because such compatibility frequently predicts success on the job. But that tack can be problematic: It is subject to social bias and may lead to a lack of diversity, and interviewers tend to rely on easily observed but largely irrelevant characteristics such as hairstyle and clothing.

Seeking to identify a more reliable means of assessing cultural fit, researchers asked job seekers at a midsize tech company to answer three optional essay questions as part of the application process. (The interviewers never saw the essays, which didn't figure in to hiring decisions.) Using a standard textual analysis technique, they analyzed the essays of the 353 applicants who were subsequently hired and compared them with those of the 11,234 candidates who were not. They found distinct similarities in the way the successful candidates used language: For instance, they were three times as likely as unsuccessful candidates to use the company's name. The study found that an increase of one standard deviation in linguistic similarity boosted a candidate's chances of being hired by as much as 20%.

In a follow-up study involving e-mails of new hires and existing employees, the researchers showed that linguistic similarities also predict cultural fit once new workers are on board. "Our results indicate that job candidates' language contains an identifiable and salient cultural signal that is separate and distinct from the cultural proxies on which interviewers typically rely," they say. ■

ABOUT THE RESEARCH "Distinguishing Round from Square Pegs: Predicting Hiring Based on Pre-hire Language Use," by Sarah Kathryn Stein, Amir Goldberg, and Sameer B. Srivastava (working paper)

OPERATIONS
HOW STICKY ARE CONSULTANTS' INTERVENTIONS?

When companies hire consultants to help them find more-efficient ways to operate, they often see a short-term bump in performance. But do the benefits last over time? It has long been an open question: Proponents of the "Toyota way" view such initiatives as the start of a continuous cycle of improvement, while others argue that as many as two-thirds of transformation efforts ultimately fail. A new study suggests that the answer lies somewhere in between—and points to factors that could help companies sustain the ROI of consultant interventions.

Starting in 2008, consultants worked for two years with some of the 28 weaving plants owned by 17 Indian textile firms (the other plants served as a control group). A research team visited both groups of plants in 2017 to see whether the consultants' recommendations had produced lasting effects. Although about half the suggested activities had been dropped, the team found a significant gap in practices and performance between the facilities the consultants had worked with and the ones they hadn't. In fact, worker productivity had increased by 35% more among plants in the former group. And many of the new best practices had spread to other plants within the same firms, indicating a spillover effect that increased the value of the consulting projects.

The researchers also investigated why many of the consultants' recommendations had fallen by the wayside despite having produced clear results. "Managerial turnover and the lack of [CEO and CFO] time were two of the most cited reasons for the drop in management practices… highlighting the importance of key employees," they say. ■

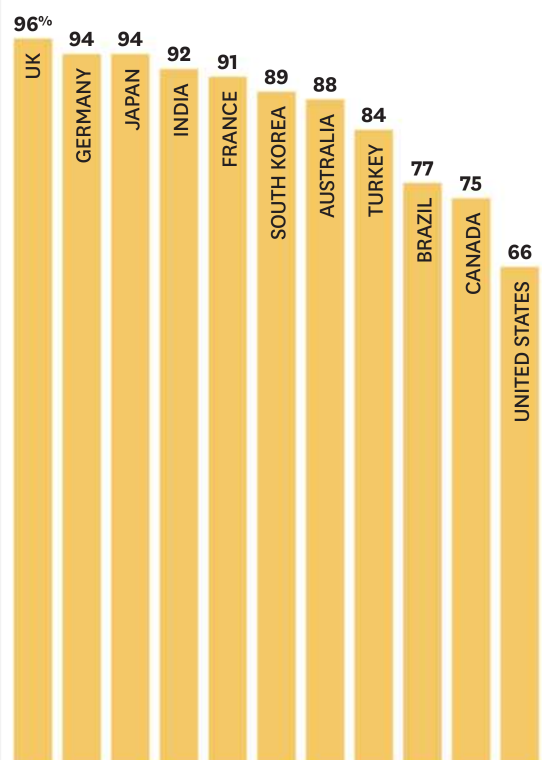
ABOUT THE RESEARCH "Do Management Interventions Last? Evidence from India," by Nicholas Bloom et al. (working paper)

PEOPLE WITH HIGH LEVELS OF JOB SATISFACTION TYPICALLY MISS FEWER WORKDAYS THAN OTHERS– BUT EMPLOYEES WHO SCORE HIGH ON A TEST OF GUILT PRONENESS TEND TO SHOW UP EVEN IF THEY DON'T ENJOY THEIR WORK.

"CLARIFYING THE LINK BETWEEN JOB SATISFACTION AND ABSENTEEISM: THE ROLE OF GUILT PRONENESS," BY REBECCA L. SCHAUMBERG AND FRANCIS J. FLYNN

SUSTAINABILITY
GREEN BOARDROOMS

A study of 1,681 companies found that 82% direct their boards to oversee climate-related risks and opportunities. Beneath that figure lie clear geographic differences, with European companies far more likely than those in other regions to require this. ■

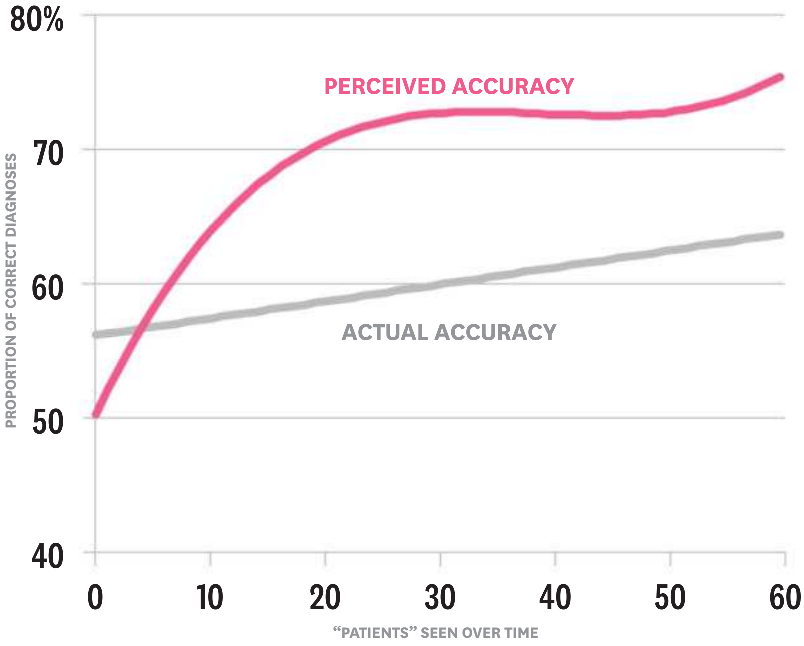


PERCENTAGE OF COMPANIES WITH BOARD-LEVEL OVERSIGHT OF CLIMATE CHANGE ISSUES

SOURCE "READY OR NOT: ARE COMPANIES PREPARED FOR THE TCFD RECOMMENDATIONS?" CDP WORLDWIDE AND THE CLIMATE DISCLOSURE STANDARDS BOARD

PERFORMANCE
EARLY WINS BREED OVERCONFIDENCE

Being too sure of oneself can be a problem. New research reveals a pattern in how it develops. In an experiment that involved making medical diagnoses, subjects with no experience started out underconfident, but after just a few early successes they perceived themselves as more expert than they actually were—a phenomenon the researchers call "the beginner's bubble." The graph below illustrates how quickly subjects' perceptions of their own accuracy outstripped their actual skill. ■



SOURCE "OVERCONFIDENCE AMONG BEGINNERS: IS A LITTLE LEARNING A DANGEROUS THING?" BY CARMEN SANCHEZ AND DAVID DUNNING (*JOURNAL OF PERSONALITY AND SOCIAL PSYCHOLOGY,* 2018)

HARVARD BUSINESS REVIEW JANUARY--FEBRUARY 1980

"To many the phrase *managing your boss* may sound unusual or suspicious.... [But] we are not referring to political maneuvering or apple polishing. Rather, we are using the term to mean the process of consciously working with your superior to obtain the best possible results for you, your boss, and the company."

"MANAGING YOUR BOSS," BY JOHN J. GABARRO AND JOHN P. KOTTER

CAREERS

THE BEST PERFORMERS AREN'T THE BEST BOSSES

Nearly half a century ago the Canadian educator Laurence Peter described what became known as the Peter Principle. It held that managers "rise to their level of incompetence" because they are promoted on the basis of performance in their current role, even if that is not likely to translate to success in the next one. Although it is an accepted adage, the Peter Principle was never empirically tested on a large scale—until a recent study examined whether firms really do pass over their best potential managers in favor of employees with superior technical skills.

The researchers examined performance data for 53,035 sales reps and managers at 214 companies in a variety of industries. (Sales is an ideal field for testing the phenomenon, because performance is easily measured.) They found, first, that success as a rep was indeed predictive of promotion: Each increase in sales rank (equal to a doubling of sales) raised a rep's chances of becoming a manager by about 15%. Second, sales performance was negatively associated with managerial success: Each increase in sales rank correlated with a 7.5% *decline* in the performance of each of the new manager's subordinates. The study also showed that reps who frequently split commissions with colleagues—meaning they worked collaboratively to close deals—made better managers than "lone wolves."

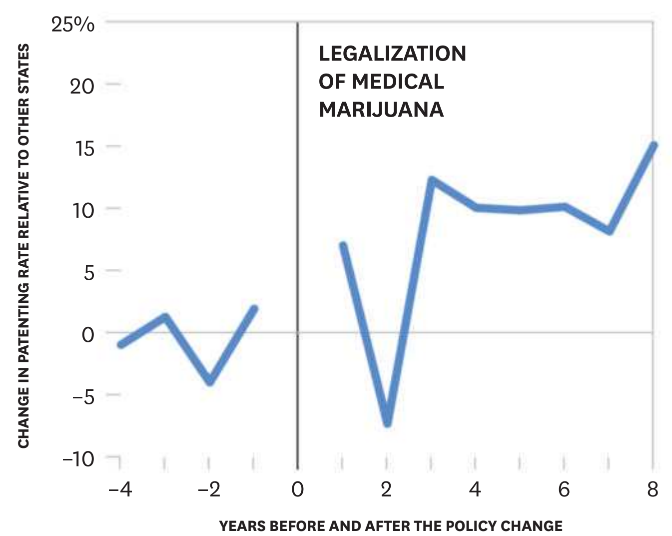
These findings don't necessarily mean that a company's policies are misguided, the researchers say. They point out that "firms may heavily weight current job performance in promotion decisions to encourage workers to exert effort in their current job roles and to maintain norms of fairness." Still, leaders should evaluate the costs of moving their best individual contributors into management positions and consider rewarding top performers with pay rather than promotions. They might also contemplate the use of dual career tracks—one for people with outstanding technical skills, the other for those with strong leadership potential. ■

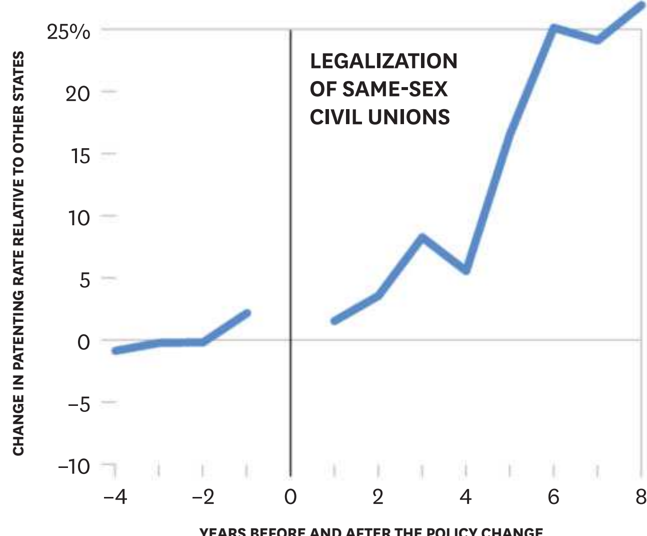
ABOUT THE RESEARCH "Promotions and the Peter Principle," by Alan Benson, Danielle Li, and Kelly Shue (working paper)

INNOVATION

SOCIAL POLICIES CAN DRIVE PATENTS

Innovation is a social process, and government policies affect how people interact. New research shows a surprising relationship: A study of all U.S. patents filed from 1990 to 2007 found that states implementing two specific policies—the legalization of medical marijuana and the recognition of same-sex civil unions—subsequently saw a significant rise in their innovation output, as measured by the number of new patents granted. The researchers controlled for other variables, and evidence suggests that the relationship is causal: "Social liberalization policies at the state level significantly influence local rates of innovation," the researchers write. The graphs below show the average change in patenting rates among states that adopted the new policies relative to states that did not. ■





SOURCE "HIGH ON CREATIVITY: THE IMPACT OF SOCIAL LIBERALIZATION POLICIES ON INNOVATION," BY KEYVAN VAKILI AND LAURINA ZHANG (*STRATEGIC MANAGEMENT JOURNAL*, 2018)

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Ashley Martin, an incoming assistant professor at Stanford, and Katherine Phillips, a Columbia professor, asked people to rate their agreement with varying statements about the importance of gender differences. They found that women who believed in focusing on men's and women's similarities ("gender blindness") felt greater power and confidence than women who advocated celebrating women's distinctive qualities ("gender awareness"). The researchers' conclusion:

WOMEN BENEFIT WHEN THEY DOWNPLAY GENDER

PROFESSOR MARTIN, DEFEND YOUR RESEARCH

MARTIN: Across this study and four others, we saw the same pattern: Downplaying differences made women more confident. They thought they could overcome challenges at work. They felt comfortable disagreeing with others. They said they would take more risks, take initiative, negotiate. These effects were strongest in male-dominated environments.

HBR: What does it mean to downplay gender? Gender blindness and gender awareness are both strategies for achieving equality. Awareness is a set of beliefs or practices that promote acknowledging and embracing gender differences. Gender blindness, obviously, is the opposite, but it doesn't actually mean ignoring differences. It means deemphasizing them, seeing them as less important than other factors. It's about focusing on similarities but also about individuality: what makes someone unique as a person rather than what makes someone different as a woman. Both strategies are well-intentioned, but there's uncertainty about which one is better.

It sounds as if you're saying gender blindness is. Our findings suggest that in certain contexts it is. Blindness removes the "male" connotation from traits and behaviors like assertiveness, competitiveness, and risk taking, which are necessary to get ahead at work. "Ungendering" these qualities makes women more likely to recognize them in themselves and to feel more confident.

It's a little sad to hear that women have to downplay their gender to be better regarded at work. Haven't we gotten past that? Gender blindness is counterintuitive, because we're often told to celebrate diversity. But embracing diversity is not at all the problem. The problem is really the types of differences we emphasize.

Which differences are problematic? I'm talking about fundamental personality, interest, and skill-based differences, which, to be honest, are really stereotypes around what men and women are supposedly good at and what they like. Our first study found that when women are asked to think of gender differences, they end up listing things like agency, assertiveness, independence, competitiveness, and action taking. We still tend to associate those qualities with men and with leaders. And we found that women thought an emphasis on these "differences" negatively affected people's perceptions of them as leaders.

> **WOMEN THOUGHT AN EMPHASIS ON GENDER DIFFERENCES HURT PERCEPTIONS OF THEM AS LEADERS.**

So we're talking about downplaying perceived differences in abilities, not differences in outcomes? Absolutely. We don't want to downplay issues that exist, like the systemic inequality women face. It's been shown that meritocratic policies, which don't recognize that people face different treatment and have different opportunities at work, are detrimental to women and minorities. If you're blind to those differences, you're ignoring systemic problems within your organization that lead women to feel less confident. You're saying, well, if it's not the system, it must be the women. That's harmful.

Gender blindness needs to be applied very carefully. It's about eliminating the idea that women have different skills and abilities, because they don't.

But doesn't downplaying your gender feel a little...inauthentic? Not at all. Gender blindness doesn't mean that women should act more like men; it diminishes the idea that certain qualities are associated with

men and women. In fact, I think gender awareness has the same risk of promoting inauthenticity, especially if women don't necessarily identify with "feminine" traits and behaviors. Highlighting gender differences and then telling women—and men—to bring their authentic selves to work assumes that their authentic selves revolve around their gender. Gender blindness allows people to be truly authentic, rather than defining what authenticity means for men and women.

Is gender blindness something women can adopt to become more confident? Yes, we tested this. We had people read a newspaper article about new findings on how to achieve workplace equality. Half of them read an article saying that gender differences don't really exist and we should be focusing on similarities to achieve intergroup harmony. The other half got an article that said we should be emphasizing these differences, that women have all these great skills to bring to the table, and by embracing them we can achieve harmony. Afterward, women who read the blindness message were more confident. They rated themselves higher on items like "I can overcome challenges" and "I feel comfortable disagreeing with people or challenging others at work." That was compared with both their baseline condition and the awareness group.

WOMEN WHO READ AN ARTICLE SAYING THAT GENDER DIFFERENCES DON'T EXIST WERE MORE CONFIDENT.

Did you study men? In one study we found that gender blindness didn't affect men's confidence. But in another study we found that it made men feel less confident. This is consistent with our argument, because the type of differences we're highlighting are male stereotypes that are seen as advantageous at work, so downplaying them should lead men to feel less confident.

Do we know that it's women who need to be more confident, and not men who need to be less overconfident? We found that both men and women are overconfident about their skills, but men are more overconfident than women are. It may just be that women are more accurate in their self-assessments, but the problem is the gap between men and women.

How did you see confidence translate into actual behavior? We rated people's responses to questions about a number of scenarios. For example, if a woman was given a certain hand in blackjack, would she take another card? In a pay negotiation, would she try for her dream salary? We found that when women identify more with stereotypical male traits, which they're more likely to do in a gender-blind organization, it leads them to feel more confident and take more action.

Is gender blindness the same as racial color blindness? No, though we drew a lot of the language and tests we used from the research on race. But the dialogue we're having about race, at least in America, isn't the same as the one we're having about gender. When we tell people to be blind to race, they often ignore systemic and structural differences in the way people of color are treated, which is why we might see benefits from being aware of race. A lot of the differences that we're ignoring with gender blindness aren't systemic; they're stereotypes. So in theory color blindness is analogous, but in practice it's not.

How can managers espouse a gender-blind approach? They can avoid reinforcing stereotypes in the way they assign tasks and responsibilities and develop and interact with their subordinates. For example, women often get asked to do office housekeeping or emotional work because people think they're better at those tasks. People make assumptions about the interests and desires that men and women have. Gender blindness minimizes those assumptions so that each person is treated as an individual.

WHEN WOMEN IDENTIFY MORE WITH STEREOTYPICALLY "MALE" TRAITS, THEY TAKE MORE ACTION.

How should I downplay my gender when I go to work? I wouldn't tell anyone to mute their gender identity or reject femininity. You just want to remember that your gender shouldn't limit you. Men and women are not naturally better suited to different roles, and men and women aren't better or worse at certain things. It's important to remind yourself that you are just as entitled to opportunities and advancement as anyone around you.

Interview by **Nicole Torres**
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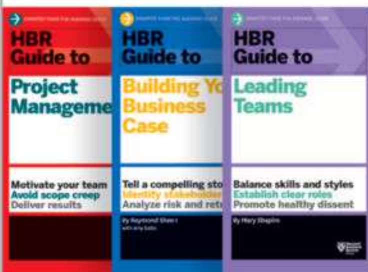

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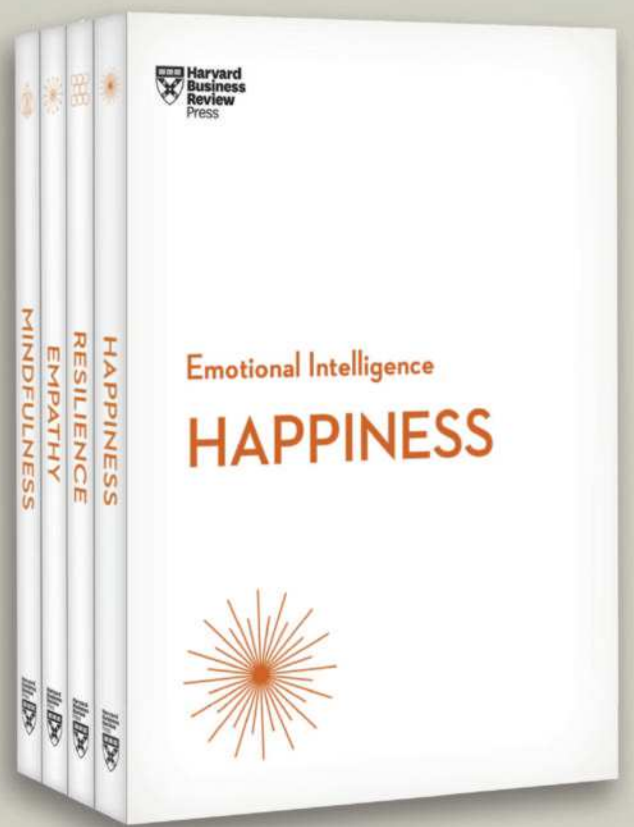

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THE CEO OF LEVI STRAUSS ON LEADING AN ICONIC BRAND BACK TO GROWTH

by Chip Bergh

PHOTOGRAPHY BY JESSICA CHOU

I'm a brand guy. I spent 28 years at Procter & Gamble in brand management. I led the integration of P&G's $57 billion acquisition of Gillette, and then I ran that division—one of P&G's most profitable—for six years. It was a high-visibility assignment, so I started to get calls about CEO jobs. Most of them weren't very interesting. Then, in late 2010, I was at a hotel in Beijing for a quarterly meeting of our leadership team. A headhunter I knew called. She said, "I have something you may be interested in." I rolled my eyes—how many times had I heard that before? "OK, what is it?" I asked. "Levi Strauss," she replied. My one-word response: "Wow."

Few brands are as iconic as Levi's, and Levi Strauss is one of the oldest companies in America. It was a brand I grew up with and had an emotional attachment to. The story of its founding is well known: Launched as a dry-goods retailer during the California gold rush, the company got a breakthrough in the 1870s, when it patented the use of rivets to strengthen the seams in denim work pants, inventing blue jeans. But as I began doing research to prepare for my first meeting with its board chairman, I was surprised by what I found. I'd guessed that Levi Strauss had revenue of about $10 billion. But in fact its sales had peaked at $7 billion in 1997 and then fallen to $4.1 billion in five years. From 2001 to 2010 they never exceeded $4.5 billion. The more I studied the company's recent history, the more it looked like *The Gang That Couldn't Shoot Straight*. I didn't remember a single Levi's advertisement. Its financial performance had been erratic for a decade.

Although I worked in consumer packaged goods, I was intrigued by the apparel industry as a result of my time on the board of VF (which owns the Lee and Wrangler jeans brands). After a long dinner with the chairman of Levi Strauss, I could see this was a great opportunity. I was 54 years old and ready for a change. When I decided to accept the CEO role, I saw it as a noble cause. I wanted to leave a legacy and make the company great again.

"LIVE IN LEVI'S"

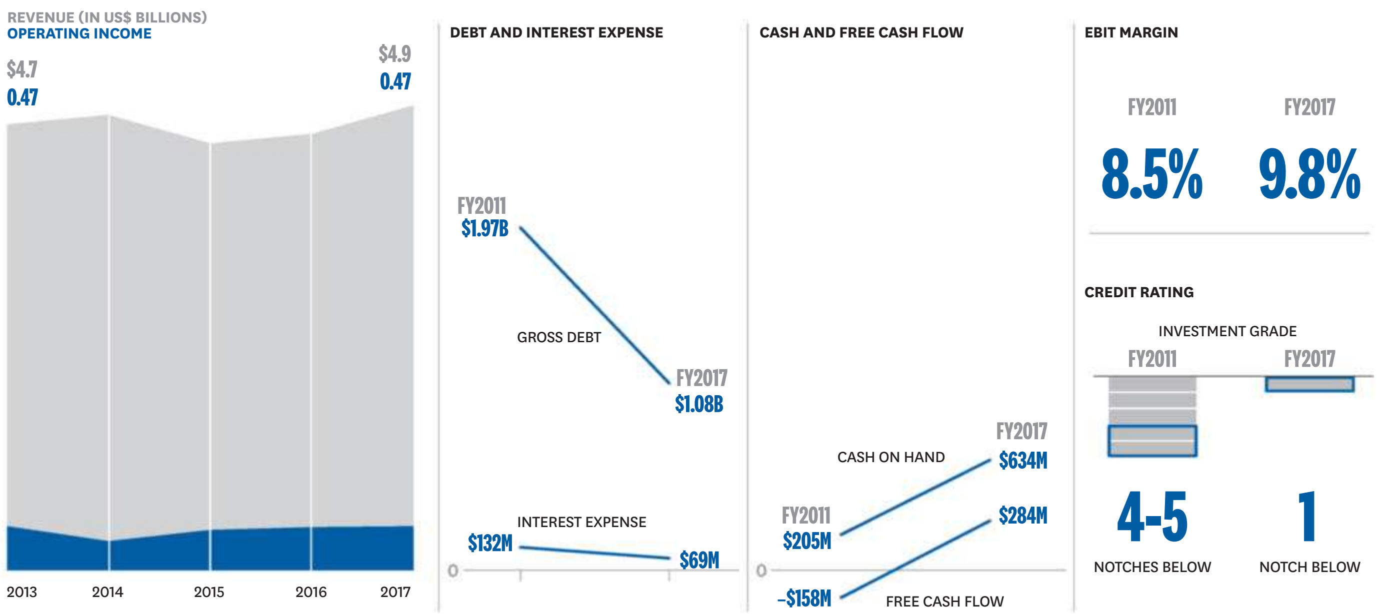
When I arrived, in September 2011, I basically went on a listening tour, spending an hour with each of the company's top 60 executives. I had e-mailed them my questions beforehand: What are three things we should not change? What are three things we absolutely must change? What's one thing you're hoping I'll do? What's one thing you're afraid I may do? After about 15 or 20 of those meetings, I had a pretty clear sense of the problems. When I asked people what they were working on, and how that work linked to Levi's strategy, I got a lot of blank stares. It was obvious that they were rowing in different directions.

The lack of a clear strategy wasn't surprising. But two other things really were. At an employee town hall meeting I asked, "How many of you think this company is performing well?" Three-quarters of the attendees raised a hand. I was shocked. A lack of urgency, of financial discipline, and of data discipline permeated the culture. I took my listeners through why I believed that the company was underperforming and why we had an opportunity—and an obligation—to do better. Succeeding would require significant cultural change.

The second surprise was related to the first. Every new CEO expects to make a few changes in the top leadership team, especially when coming in from the outside. But I was astonished by how many of my team members I needed to replace. When I arrived, I had 11 direct reports. Within 18 months nine of them were gone, and only one of the other two is still here today. We now have a world-class executive team that I would put up against that of any other company in the world.

Even as I worked to understand what was going on inside Levi Strauss, I studied the market and our customers. During my second month in the job, I visited Bangalore and asked our people there to set up an in-home visit. An in-home typically starts with broad questions about lifestyle and interests and then narrows down to how the customer uses the product and views the category. P&G relies heavily on in-homes, so I had been doing them for years. I find them incredibly useful, even though the insights gained are qualitative.

LEVI STRAUSS FACTS & FINANCIALS



NOTE THE COMPANY'S REVENUE AND OPERATING INCOME HAVE BEEN INFLUENCED BY CURRENCY FLUCTUATIONS.
SOURCE LEVI STRAUSS

The customer I met with was a 29-year-old professional woman from an upper-middle-class family. She lived with her parents in an air-conditioned home with marble floors; it differed greatly from many of the homes I'd visited in India while at P&G. The woman spoke perfect English and had attended Cambridge. She had about 10 pairs of jeans—Hudson, Guess, Calvin Klein, and some others. We went into her room, and she pulled them out of her wardrobe.

We talked about each pair—what she liked, what she didn't, and when she wore it. She had two pairs of Levi's, and we talked about those last. She pointed to one pair and said, "These are my go-to jeans—the ones I'll wear day-to-day, like if I'm going to meet a girlfriend." Then she focused on the second pair. "These are the jeans I wore at university," she said. "They don't even fit me anymore, but I can't bear to part with them because of all the memories." Then she said something arresting: "You wear other jeans, but you live in Levi's." I still get goosebumps when I recall that moment. To me, her words captured the essence of our brand. "Live in Levi's" became our advertising tagline. That experience is an illustration of how much value can come from listening to consumers.

WHEN I ASKED PEOPLE WHAT THEY WERE WORKING ON, AND HOW THAT WORK LINKED TO LEVI'S STRATEGY, I GOT A LOT OF BLANK STARES.

1853
COMPANY FOUNDED

1873
FIRST BLUE JEANS
("waist overalls") are manufactured after Levi Strauss and Jacob Davis are awarded a patent to create work pants reinforced with metal rivets

FREEDOM-ALLS

c. 1905
KHAKI PANTS
and coats introduced

1918
FREEDOM-ALLS
the company's first garment for women

1928
"LEVI'S"
registered as a trademark

1934
FIRST JEANS FOR WOMEN
introduced

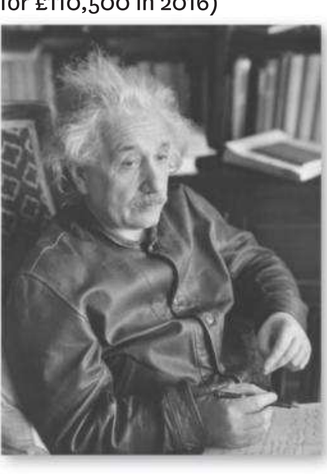
1850 — 1875 — 1900 — 1925

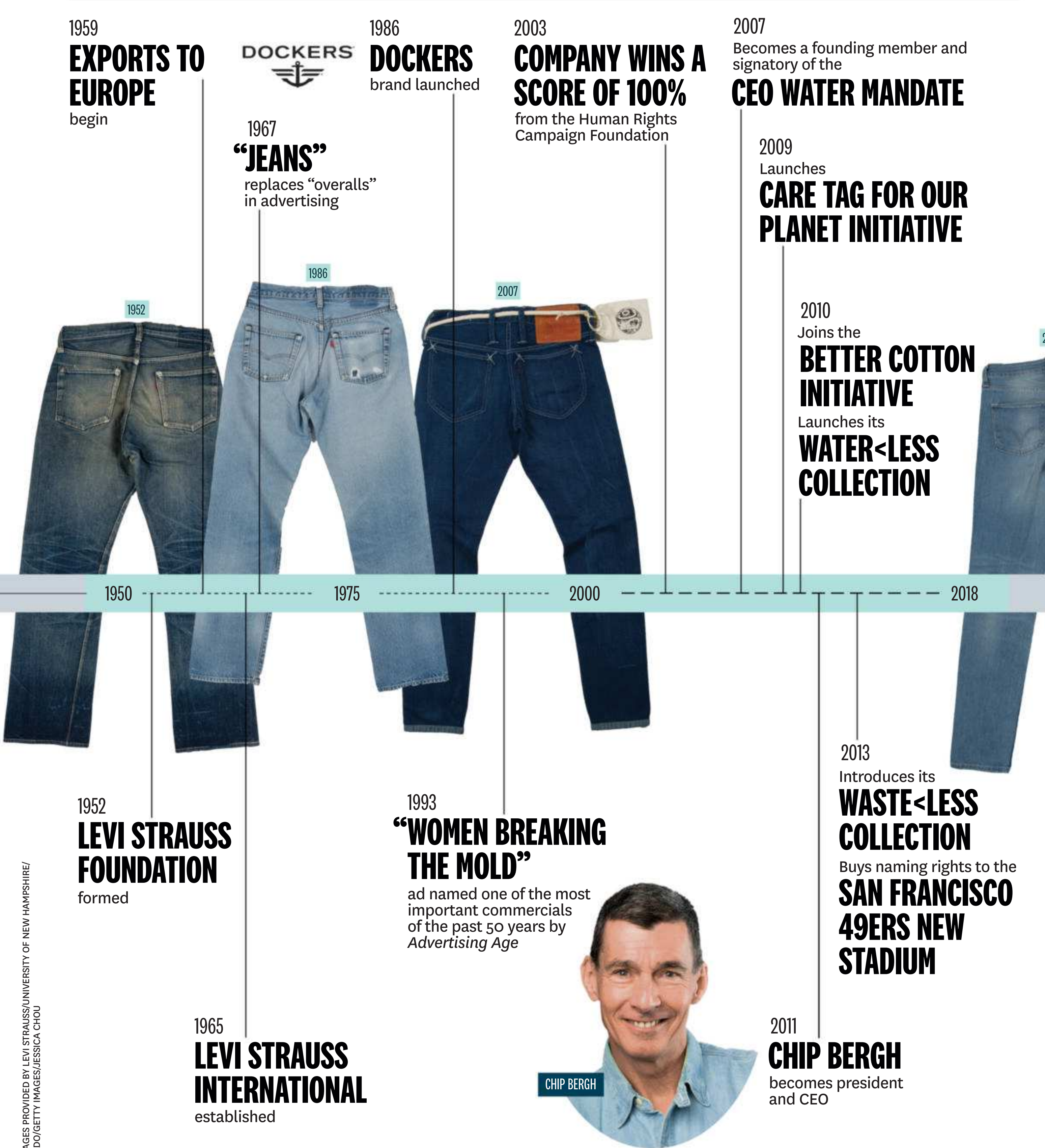
1902
LEVI STRAUSS DIES
Four nephews inherit the company

LEVI STRAUSS

1906
SAN FRANCISCO EARTHQUAKE
and fire destroy company headquarters

1935
ALBERT EINSTEIN
buys his famous Levi Strauss leather jacket (sold at Christie's for £110,500 in 2016)





IMAGES PROVIDED BY LEVI STRAUSS/UNIVERSITY OF NEW HAMPSHIRE/ GADO/GETTY IMAGES/JESSICA CHOU

A FOUR-PART STRATEGY

But a new tagline isn't a new strategy, which is what the company really needed. Devising one was my top priority during those early months. I tortured the finance department, asking it to slice and restack the data to help me understand how we could create a plan to grow revenue and profits. About six months after I arrived, we rolled out the plan. It had four key pieces, each of them memorable and easy to understand:

Build our profitable core. This piece was based on the recognition that 80% of our cash flow and profits come from men's bottoms—jeans and Dockers—and from sales in our top five countries and to our top 10 wholesale customers (primarily department stores, including Kohl's, JCPenney, Sears, and Macy's). This part of our business has high market share but relatively low growth. It's vitally important to our finances, however; if the core isn't healthy, our business can't succeed.

Expand for more. At the time, we had a very low market share in women's clothing, and we weren't selling enough tops. The rule of thumb in apparel is that most people buy three or four tops for every bottom, but our numbers were just the opposite. We also had very low sales in developing markets such as Brazil, Russia, India, and China. That represented an opportunity.

Become a leading omnichannel retailer. Even though most of our products were sold in department stores, Levi's had 2,700 of its own stores around the world, plus an e-commerce website. When I walked through department stores, I saw that our brand wasn't consistently showcased. But in our own retail stores, of course, we controlled the experience, and we got higher margins on sales. So we needed to grow sales in our brick-and-mortar stores and on our website as well—because over time more apparel sales would be online.

Achieve operational excellence. We needed to cut costs, drive cash flow, and become more data driven and financially disciplined to free up money to invest in technology and innovation. We also needed to reduce the nearly $2 billion in debt remaining from a leveraged buyout in the late 1990s. When I arrived, we were spending more on interest payments than on advertising, which makes it difficult to grow a brand.

THE INNOVATION LAB

One of the first places we reinvested the savings from our new strategy was in our Eureka Innovation Lab. The lab was in Corlu, Turkey, colocated with one of our factories. To me, this was crazy. Almost all our designers were in San Francisco, where the company is headquartered. To get to Corlu from San Francisco took more than 12 hours, so people would go for a week or two, once or twice a year. We spent a fortune shipping samples back and forth, because apparel innovation is iterative and tactile. How could an apparel company put such a low priority on innovation?

We decided to open a new facility four blocks from our headquarters. It's essentially a pilot plant, with a laundry operation, cut and sew capabilities, hundreds of rolls of denim, and dozens of creative people. We spent a few million dollars on it, and our CFO was worried that we'd never see a return. I signed off on it anyway, because I figured that if we created the right environment, something huge would come out of it.

Since the lab opened, in 2013, its biggest success has been our revamped women's denim line, which we launched in 2015. Our women's business had been in decline, owing partly to the rise of athleisure wear. It drives me crazy that women wear yoga pants to nice restaurants—denim would look so much better. But they're choosing athleisure because it's more comfortable. I told our designers that we had to fix this problem. They began creating denim with new technologies, such as four-way stretch—fabric that recovers quickly and doesn't get baggy at the knees (a common problem with stretch jeans). Consumers loved the stretch, the comfort, the soft fabric, and the way they looked in the new designs. Since that relaunch our women's business has experienced 11 quarters of consistent growth, and sales have increased from less than $800 million to more than $1 billion annually.

The other big investment came in 2013, when we bought the naming rights to Levi's Stadium, the new home of the San Francisco 49ers, from the NFL. This was a 20-year, $220 million deal with an option to extend it to 25 years. That's a lot of money, but I had experience in this area. In my previous job I'd overseen Gillette's relationship with the New England Patriots, who have played at Gillette Stadium since

WHEN I ARRIVED, OUR INNOVATION LAB WAS IN TURKEY—MORE THAN 12 HOURS OF TRAVEL AWAY. TO ME, THIS WAS CRAZY.

2002. The people who attend concerts and NFL games are Levi's core customers, so this would put our brand back at the center of the cultural conversation. Today the 49ers mascot wears Levi's jeans, our brand is all over the stadium, and we can entertain important stakeholders in great seats. When Super Bowl 50 was played in Levi's Stadium in 2016, some experts calculated that the brand exposure from that week alone was worth a significant portion of what we paid for the naming rights.

"DON'T WASH JEANS"

In marketing our products we tried to find the right balance between highlighting our heritage and being contemporary. If a seasoned brand dwells too much on its history, it can feel old and dusty. But if you disregard your history, you're walking away from one of your strongest assets. I spent time looking at other successful brands, such as Converse and Ray-Ban, that leverage their heritage. One example of the way we meld old and new is our iconic trucker jacket. This year we celebrated the trucker's 50th birthday, but we also partnered with Google to create a wearable technology version that lets you control your iPhone from your jacket sleeve. Sales of all Levi's trucker jackets jumped nearly 40% last year, which shows that today's consumers are looking for authenticity and want a brand that stands for something—as ours does.

Not everything I've done in this job has gone as planned. In 2014 I became a viral sensation for an offhand comment I made at a conference on sustainability. We've worked hard to make our products more environmentally friendly, including reducing the amount of water used in creating our jeans. At the conference I mentioned that a life-cycle analysis shows that most of the water jeans consume is used not in our manufacturing them but in owners' washing them. I explained that people wash their jeans far more than is necessary—in fact, I was wearing a pair of Levi's that were two years old, and I had never put them in a washing machine. (I wash them every few months by hand and line dry them, which is what we recommend.) The remark was meant to be a wake-up call—you don't need to wash jeans every time you wear them!—but people took it to mean that I never wash my jeans. Today, if you type "CEO Levi's" into Google, "don't wash jeans" comes up. I expect that my supposed anti-laundry stance will be mentioned in my obituary.

MUCH ROOM FOR GROWTH

I've learned a lot during my seven years here. The learning curve has been steeper than I expected. I thought my brand-building experience would translate directly to this job—and it has in some ways—but the cycle times and the pace of innovation are much different in apparel. At Gillette we launched the Fusion razor in 2006, and the first upgrade was in 2010. At Levi Strauss our product lines change every six months, so it's crucial to get the trends right. The other big learning for me has been running a retail operation, which I hadn't done at Procter & Gamble. Today one-third of our business comes from selling direct to consumers via our website and company-owned retail locations. Those businesses have grown 51% in the past five years, and we're well on the way toward our goal of being a world-class omnichannel retailer.

I've also learned that it's very hard to change a culture. When a company is in decline for 10 years, something perverse happens to its culture. I've spent a lot of time with my executive team and the company's top leaders around the world to shape the behaviors and expectations that define a high-performance culture. It all starts with having the right people and unleashing them to tackle some of the biggest challenges. We have become more focused on customers and consumers in general, on winning, on teamwork, and on the idea that performance really matters—but even now that we're growing again, the culture has been slow to change.

The company is making good progress. We've delivered almost five straight years of top- and bottom-line growth and have more than doubled the value of the enterprise. We've significantly strengthened our balance sheet, paying down about $1 billion in debt. Our balance sheet is now an asset (not a liability), with $1.2 billion of liquidity. And we've dramatically increased our investment in advertising, which is working. Fiscal 2017 was the strongest year the company has had in more than a decade, generating an 8% revenue increase, while the Levi's brand grew 9%. And although we've increased revenue and profits, we still have much room for growth. Our global market share in women's clothing is in the high single digits. Even if athleisure continues to be strong and the women's denim market stays flat, we can grow by stealing share. Our tops grew 35% last year, but our market share for tops is still below 1%. Everywhere I look I see upside. We have nearly 3,000 stores now, and unlike a lot of retailers, we're continuing to open new ones.

I believe we can grow beyond our historical peak of $7 billion and someday be a $10 billion brand, as I once assumed the company was. Levi's lost a generation of consumers in the early 2000s, but today our customers are younger than ever—and we're gaining momentum as we bring them back.

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Spotlight

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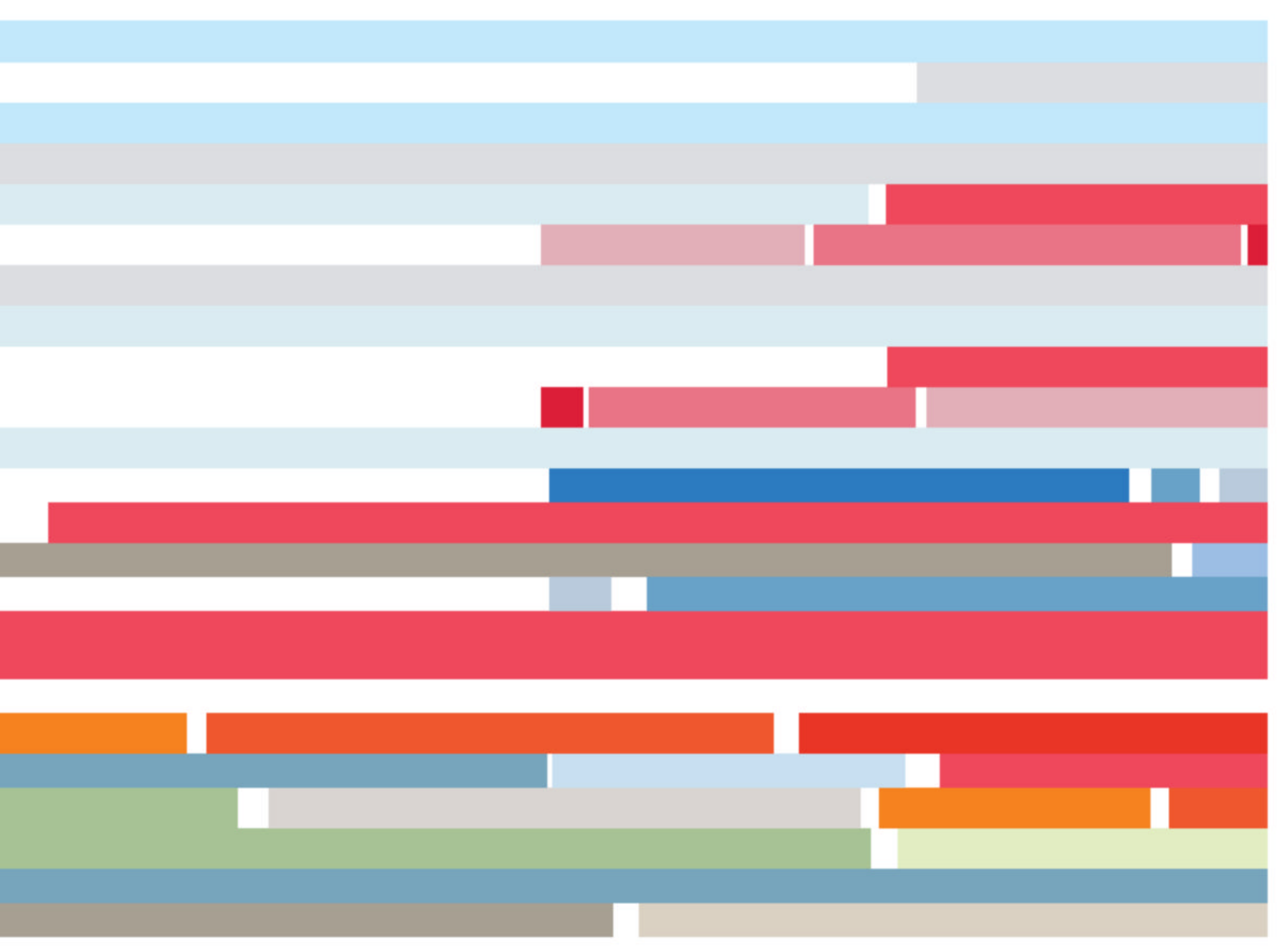
HOW CEOs MANAGE TIME

TIME IS THE SCARCEST RESOURCE LEADERS HAVE. WHERE THEY ALLOCATE IT MATTERS—A LOT.

BY MICHAEL E. PORTER AND NITIN NOHRIA

DATA VISUALIZATION BY SCOTT BERINATO



In the lexicon of management, the CEO is the epitome of leadership. Yet surprisingly little is known about this unique role. While CEOs are the ultimate power in their companies, they face challenges and constraints that few others recognize.

Running a large global company is an exceedingly complex job. The scope of the organization's managerial work is vast, encompassing functional agendas, business unit agendas, multiple organizational levels, and myriad external issues. It also involves a wide array of constituencies—shareholders, customers, employees, the board, the media, government, community organizations, and more. Unlike any other executive, the CEO has to engage with them all. On top of that, the CEO must be the internal and external face of the organization through good times and bad.

CEOs, of course, have a great deal of help and resources at their disposal. However, they, more than anyone else in the organization, confront an acute scarcity of one resource. That resource is *time.* There is never enough time to do everything that a CEO is responsible for. Despite this, CEOs remain accountable for *all* the work of their organizations.

The way CEOs allocate their time and their presence—where they choose to personally participate—is crucial, not only to their own effectiveness but also to the performance of their companies. Where and how CEOs are involved determines what gets done and signals priorities for others. It also affects their legitimacy. A CEO who

doesn't spend enough time with colleagues will seem insular and out of touch, whereas one who spends too much time in direct decision making will risk being seen as a micromanager and erode employees' initiative. A CEO's schedule (indeed, any leader's schedule), then, is a manifestation of *how* the leader leads and sends powerful messages to the rest of the organization.

A crucial missing link in understanding the time allocation of CEOs—and making it more effective—has been systematic data on what they actually do. Research on that has tended either to cover a small handful of CEOs, like the 1973 study in which Henry Mintzberg closely observed five chief executives (some of whom led nonprofits) for five days each, or to rely on large surveys that cover short periods (such as our HBS colleague Raffaella Sadun's 2017 study based on daily phone surveys with 1,114 CEOs from a wide variety of companies in six countries over one week).

Our study, which we launched in 2006, offers the first comprehensive and detailed examination of CEO time use in large, complex companies over an extended period. To date, we have tracked the time allocation of 27 CEOs—two women and 25 men—for a full quarter (three months) each. Their companies, which are primarily public, had an average annual revenue of $13.1 billion during the study period. These leaders were all participants in the New CEO Workshop, an intensive program that every year brings newly appointed CEOs of large companies to Harvard Business School in two cohorts of 10 to 12 each. In total just over 300 CEOs have attended it.

In the study each CEO's executive assistant (EA) was trained to code the CEO's time in 15-minute increments, 24 hours a day and seven days a week, and to regularly verify that coding with the CEO. The resulting data set reveals where, how, and with whom the CEO spent his or her time and on what activities, topics, and tasks. Because it also covers what CEOs do outside of work, we have visibility into how CEOs balance work and personal life. In all, we collected and coded data on nearly 60,000 CEO hours.

After CEOs completed the time-tracking phase, we shared their data with them, comparing it with anonymized data of the other CEOs we had studied up to that point. These intensive debriefings often included the CEOs' reflections on the pressures they faced in managing time, and on their mistakes and lessons learned. We also shared our accumulated data with the participants in each New CEO Workshop. In our discussions, CEOs routinely described managing time as one of their greatest challenges. The observations, questions, and personal approaches to allocating time they shared further enriched our understanding.

Where and how CEOs are involved determines what gets done. It signals priorities.

In this article we will do three things:

First, we'll provide a descriptive analysis of the data. How much time do CEOs spend at work versus on personal activities? How much do they spend in meetings versus thinking and reflecting alone? How much do they rely on e-mail versus face-to-face conversation? Do they spend more time inside the company or outside, more with customers or investors? We'll answer those questions—and many more.

Second, we will offer prescriptions for how CEOs can manage their time more effectively across their many responsibilities. One of our most striking observations is that the way leaders allocate their time varies considerably. (See the exhibit "Looking Beyond the Averages.") Some of this variation reflects differences in their businesses and management practices. However, many time allocation decisions, such as participation in company rituals that offer limited return, reflect legacy norms and cultures, as well as a CEO's own habits. In our debriefings the CEOs all acknowledged that there were important areas where they could be using their time better. On the basis of these discussions and those with the hundreds of other CEOs in our workshops, we are convinced that every leader can improve his or her time management.

Finally, we will reflect on what our rich data reveals about the overall role of the CEO. A CEO has to simultaneously manage multiple dimensions of influence, which all contain dualities, or seeming contradictions, that effective CEOs must integrate. Understanding this broader view of the role is essential to success and also provides an important perspective for managing time well.

While our research focuses on the CEO role in large, complex companies, its findings have implications for all leaders (including executives of nonprofits) looking for ways to use their time and influence more effectively.

THE JOB IS ALL-CONSUMING

CEOs are always on, and there is always more to be done. The leaders in our study worked 9.7 hours per weekday, on average. They also conducted business on 79% of weekend days, putting in an average of 3.9 hours daily, and on 70% of vacation days, averaging 2.4 hours daily. As these figures show, the CEO's job is relentless.

About half (47%) of a CEO's work was done at company headquarters. The rest was conducted while visiting other company locations, meeting external constituencies, commuting, traveling, and at home. Altogether, the CEOs in our study worked an average of 62.5 hours a week.

Why such a grueling schedule? Because it is essential to the role. Every constituency associated with a company wants direct contact with the person at the top. As much as CEOs rely on delegation, they can't hand off everything. They have to spend at least some time with each constituency in order to provide direction, create alignment, win support, and gather the information needed to make good decisions. Travel is also an

absolute must. You can't run a domestic company, let alone a global one, from headquarters alone. As a CEO, you have to be out and about.

Making time for personal well-being. Given that work could consume every hour of their lives, CEOs have to set limits so that they can preserve their health and their relationships with family and friends. Most of the CEOs in our study recognized that. They slept, on average, 6.9 hours a night, and many had regular exercise regimens, which consumed about 9% of their nonwork hours (or about 45 minutes a day). To sustain the intensity of the job, CEOs need to train—just as elite athletes do. That means allocating time for health, fitness, and rest.

We paid special attention to the 25% of time—or roughly six hours a day—when CEOs were awake and not working. Typically, they spent about half those hours with their families, and most had learned to become very disciplined about this. Most also found at least some hours (2.1 a day, on average) for downtime, which included everything from watching television and reading for pleasure, to hobbies like photography.

The CEO's job is mentally and physically demanding. Activities that preserve elements of normal life keep CEOs grounded and better able to engage with colleagues and workers—as opposed to distant, detached, and disconnected. CEOs also have to make time for their own professional renewal and development (which our data showed was often the biggest casualty of a packed schedule). And they must be careful, as our colleague Tom DeLong puts it, not to become "like race car drivers and treat home like a pit stop."

THEY WORK FACE-TO-FACE

The top job in a company involves primarily face-to-face interactions, which took up 61% of the work time of the CEOs we studied. Another 15% was spent on the phone or reading and replying to written correspondence. The final 24% was spent on electronic communications.

Face-to-face interaction is the best way for CEOs to exercise influence, learn what's really going on, and delegate to move forward the multiple agendas that must be advanced. It also allows CEOs to best support and coach the people they work closely with. How a CEO spends face-to-face time is viewed as a signal of what or who is important; people watch this more carefully than most CEOs recognize.

Avoiding the lure of e-mail. In theory, e-mail helps leaders cut down on face-to-face meetings and improve productivity. In reality, many find it ineffective and a dangerous time sink—but one they have trouble avoiding. E-mail interrupts work, extends the workday, intrudes on time for family and thinking, and is not conducive to thoughtful discussions. CEOs are endlessly copied on FYI e-mails. They feel pressure to respond because ignoring an e-mail seems rude.

CEOs should recognize that the majority of e-mails cover issues that needn't involve them and often draw them into the operational weeds. Conversely, e-mails from the CEO can create a downward spiral of unnecessary communication and set the wrong norms, especially if the CEO sends them late at night, on weekends, or on holidays. It then becomes easy for everyone in an organization to fall into the bad habit of overusing electronic communications.

That's why setting proper expectations and norms for what e-mails the CEO needs to receive—and when he or she will respond—is essential. Norms are necessary for the others in the organization as well, to prevent e-mail from having a cascading effect on everyone, wasting precious hours and intruding on personal time. One way for the CEO to stay ahead of the digital avalanche is to have an adept EA filter messages and delegate many of them to others before the CEO even sees them. In the end, though, there is no substitute for being disciplined about resisting the siren call of electronic communications. This is a topic our CEOs were often animated about, and best practices in this area are still emerging.

Some CEOs in our study have begun to use videoconferencing as an alternative to face-to-face meetings, especially to cut down on travel for themselves and for team members who might otherwise have to come to see them. Although such efficiencies should surely be sought, CEOs must never forget that at its core their job is a face-to-face one.

IN BRIEF

THE PROBLEM
Managing the immense demands on their time is one of the biggest challenges CEOs face. Yet knowledge about how CEOs actually use time is almost nonexistent.

THE STUDY
The authors tracked the activities of CEOs at 27 large companies 24/7 for 13 weeks and then held intensive debriefs with them. The resulting data set offers deep insights not just into time management but into the CEO's role itself.

THE FINDINGS
Leaders must learn to simultaneously manage seemingly contradictory dualities—integrating direct decision making with indirect levers like strategy and culture, balancing internal and external constituencies, proactively driving an agenda while responding to unfolding events, exercising leverage while being mindful of constraints, focusing on tangible decisions and the symbolic significance of every action, and combining formal power and legitimacy.

THEY ARE AGENDA DRIVEN

CEOs oversee a large number of organizational units and work streams and countless types of decisions. Our research finds that they should have an explicit personal agenda and that most do. A clear and effective agenda optimizes the CEO's limited time; without one, demands from the loudest constituencies will take over, and the most important work won't get done.

A good agenda sets priorities for the CEO's personal involvement over the coming period. But it is not unidimensional; rather, it is a matrix including both broader areas for improvement and specific matters that need to be addressed, and it combines time-bound goals with more open-ended priorities.

In our study we asked each CEO to describe the agenda he or she was pursuing during the quarter being tracked and to highlight the hours devoted primarily to advancing it. Every executive provided an agenda. We found that the CEOs invested significant time—43%, on average—in activities that furthered their agendas. Some were far more disciplined about this than others: Time devoted to the core agenda varied widely, ranging from 14% to 80% of leaders' work hours.

Most CEOs we talked with agreed that the more time they spent on their agendas, the better they felt about their use of time.

Overall, we found that an explicit agenda is one of the CEO's most important tools for making progress on multiple work streams simultaneously, addressing differences in the rate of progress across priorities, and using time effectively despite the need to respond personally to unforeseen events.

Advancing the agenda. Keeping time allocation aligned with CEOs' top priorities is so crucial that we suggest that every quarter CEOs make a point of looking back at whether their schedule for the previous period adequately matched up with their personal agenda. They should also update the agenda to reflect current circumstances.

CEOs can benefit from making their personal agenda explicit to others. Their EAs and leadership teams both need to know and understand it so that they can stay aligned with it. (See the sidebar "Four Behaviors of Great Executive Assistants.") This understanding will help team members assume ownership of the goals and priorities of the work the CEO needs them to drive.

Dealing with unfolding developments. A good portion of our CEOs' time (about 36%, on average) was spent in a reactive mode, handling unfolding issues, both internal and external. For many chief executives, it is not immediately clear when and how to address such issues or how much time to devote to them. Say that a member of the CEO's senior leadership team leaves a meeting looking upset. Should the CEO follow up with that person right away to make sure everything is OK? Should the CEO just wait and let the team member cool off? Sometimes emerging problems seem small at first but balloon into larger distractions if the CEO doesn't attend to them. In other instances a CEO's intervention makes an issue bigger than it might have been. It's essential for CEOs to figure out appropriate responses to these unfolding situations.

Every now and then, CEOs find themselves dealing with a sudden, full-blown crisis—a product or safety failure, a hostile activist's bid, a serious cyberattack, or even an external catastrophe such as a tsunami or a terrorist attack. Most of our CEOs (89%) spent some time on crises. Though on average it was small (1% of work time during the quarter we tracked), the total amount spent varied a great deal among the leaders in our study. Crises can create make-or-break moments in a CEO's leadership. In dealing with them, CEOs need to be highly visible and personally involved; the response to such events can't be delegated. Showing genuine concern for the people affected, avoiding defensiveness, holding everyone together, and creating confidence that the organization will not only survive but emerge stronger are some of the things CEOs need to do during these times.

Limiting routine responsibilities. A surprisingly significant fraction (11%, on average) of our CEOs' work time was consumed by routine duties. Such activities varied

FOUR BEHAVIORS OF GREAT EXECUTIVE ASSISTANTS

EAs play a vital role in shielding CEOs from distractions and unnecessary activities and ensuring that leaders' limited time is used well. We often hear CEOs say that a highly skilled EA can dramatically increase their efficiency and effectiveness, and our research supports that view.

EAs often feel conflicting pressures, however, that can result in poor scheduling choices. For instance, although they may recognize that CEOs need time alone, our study shows that many EAs believe that a full CEO calendar signals that they're doing their job. They tend to book back-to-back appointments, limiting time for spontaneous communications or solitary reflection. In addition, while EAs recognize that protecting a CEO's time is one of their most important duties, some have a human reluctance to say no to people (especially colleagues in the organization). That allows unessential meetings to creep into the CEO's day. Conversely, other EAs take their traditional role as gatekeeper too far, maintaining such tight control over access that their bosses risk being seen as aloof or inaccessible.

Finding the right balance in managing the CEO's time requires judgment and emotional intelligence. It also requires strong communication skills, because an EA speaks for the CEO and can affect how a leader comes across. In our research we have identified four key behaviors that drive better performance:

1 **Understand the leader's agenda.** CEOs should have a written agenda detailing their top priorities (updated quarterly) and should spend much of their time on activities that advance the agenda. It's critical that the EA internalize this agenda and use it as a lens through which each meeting request is viewed. The CEO's responsibility is to ensure that the EA knows the agenda and the importance of keeping the schedule aligned with it.

2 **Include all the relevant players.** Managers at all levels tend to complain about having too many meetings. One solution is to try keeping meetings small and inviting only those whose attendance is essential. However, good CEOs delegate well, and to do so they need their direct reports and affected managers to be present. Otherwise, extra rounds of communication and follow-up will be needed after meetings. Good EAs avoid that problem by getting the right players in the room to begin with.

3 **Recognize the value of spontaneity.** Most CEOs are overbooked. They would benefit from more time to walk the hallways and initiate unplanned interactions. They also need room to react to events that can't be anticipated; leaving some open time in the leader's day will help EAs avoid frequently canceling and rescheduling appointments.

4 **Zealously protect personal and family time.** EAs should recognize that the long hours, travel, and stress of the CEO job can take a toll. Time with family and friends, regular exercise, and opportunities to recharge and reflect are crucial to effectiveness and avoiding burnout. EAs' daily scheduling choices play an important part in helping CEOs maintain the balance they need to succeed over the long haul.

considerably across CEOs, running the gamut from review meetings to board meetings, earnings calls, and investor days.

Operating reviews are a major component of a CEO's routine tasks. Their number, frequency, and length ranged widely across the leaders we studied, and our discussions suggested that some CEOs—especially those who had been COOs—overinvested in reviews that could be delegated to direct reports.

The ability of CEOs to control what we term "have-to-dos" was also quite variable. Have-to-dos include rituals such as giving welcome talks to new employees. These can play an important symbolic role and help reinforce the company's values and culture. By thoughtfully choosing which of these events to attend, CEOs can set the tone of their relationship with the organization. Yet a CEO must be disciplined about ensuring that feel-good activities don't collectively take up more time than he or she can afford.

Our discussions suggest that CEOs need to take a hard look at every activity that falls into the routine and have-to-do categories. They must ask whether it serves an important purpose or is simply a company habit, something instituted by the predecessor, or a carryover from the CEO's previous role.

THEY RELY HEAVILY ON THEIR DIRECT REPORTS

A CEO's direct reports are the company's most senior executives and include some of its most skilled managers. They span all the key elements of the business and offer CEOs the greatest opportunity for leverage. The leadership team, working together, can be the glue that helps the CEO integrate the company and get the work done.

In our study about half (46%) of a CEO's time with internal constituencies was spent with one or more direct reports, and 21% of it was spent only with direct reports. The total time spent with direct reports ranged from a low of 32% of time with internal constituencies to a high of 67%. When we explored that variation, we found that CEOs were more likely to spend time with their reports present when they had greater confidence in them.

We found that it's critical for each member of the leadership team to have the capabilities to excel and earn the CEO's full trust and support. Any weaknesses in this group significantly reduce the CEO's effectiveness, because dealing with work that reports should have handled, and cleaning up after them, eats up valuable time. In fact, when our CEOs gathered as a group across cohorts to see how things were going after they had been in office awhile, their number one regret was not setting high-enough standards in selecting direct reports. Many CEOs told us this was because they focused too much on the present and not enough on the future when they first stepped into the role. Direct reports who could manage the status quo were often not the ones who could help the CEO take the company to a new level.

The more CEOs can delegate to their leadership team, the better they generally feel about their use of time. It eases the burden of needing to get personally engaged, following up, and asking others to report back. Since CEOs see their direct reports so frequently, it is also easy to stay in touch with how things are going with matters they are handling.

Staying connected to other managers. The CEOs in our study also spent considerable time (32% of their time with internal constituencies, on average) with a broader group of senior leaders, often called the top 100 (plus or minus). Many in this group report to the CEO's direct reports. We found that time with this next level of leadership was well spent. The top 100 are often the driving force for execution in the organization, and direct contact with the CEO can help align and motivate them. These leaders are also key to succession planning: Some will be candidates to replace the company's most senior executives. Given that the people at this level are often a generation younger, a few may eventually even be candidates to succeed the CEO. So getting to know them personally can be very useful.

Not surprisingly, the CEOs in our study spent less time with lower-level managers (14%, on average) and even less time with rank-and-file employees (about 6%, on average). However, our research suggests that effective CEOs need to be careful to maintain a human face in the organization. They must stay approachable and find ways to meaningfully engage with employees at all levels. This not only keeps them in touch with what is really going on in the company but helps them model and communicate organizational values throughout the workforce.

Direct human contact with the rank and file also grounds CEOs and helps them understand employees' reality. CEOs face a real risk of operating in a bubble and never seeing the actual world their workers face. Relationships with employees at multiple levels also build a CEO's legitimacy and trustworthiness in the eyes of employees, which is essential to motivating them and winning their support.

Knowing what is going on. Spending time with the rank and file, and with savvy external frontline constituencies, is also an indispensable way to gain reliable information on what is really going on in the company and in the industry. This is a major CEO challenge. Some CEOs get frontline contact by walking the hallways and factory floors, and using mechanisms like periodic lunches, unscheduled visits, and carefully designed field trips to customer and company sites. Others use group interactions, such as town halls, to foster genuine and open conversations with a large cross section of employees (rather than present slide decks). Our data indicates that CEOs have varying success in carving out time for such steps, however.

THEY MANAGE USING BROAD INTEGRATING MECHANISMS

CEOs must avoid trying to do too much themselves. It just isn't possible for them to make or even ratify most decisions directly. Instead, effective CEOs put in place well-designed structures and processes that help everyone else in the organization make good choices. These inform, support, enable, and integrate the work of others while building the organization's capabilities.

The most powerful integrating mechanisms include strategy (on which CEOs in our study spent an average of 21% of their work time), functional and business unit reviews (25% of their time), developing people and relationships (25% of their time), matching organizational structure and culture with the needs of the business (16% of their time), and mergers and acquisitions (4% of their time).

Harnessing strategy. The CEO's single most powerful lever is ensuring that every unit—and the company as a whole—has a clear, well-defined strategy. Strategy creates alignment among the many decisions within a business and across the organization. By spending time on strategy, a CEO provides direction for the company, helps make its value proposition explicit, and defines how it will compete in the marketplace and differentiate itself from rivals. Strategy also provides clarity on what the company will

not do. A compelling strategy—if well understood throughout the organization—is motivating and energizing. And without clarity on strategy, the CEO will be drawn into too many tactical decisions.

In large, complex firms, CEOs can almost never spend enough time on strategy—they must constantly be working to shape it, refine it, communicate it, reinforce it, and help people recognize when they may be drifting from it. CEOs must also ensure that the strategy is renewed from time to time and based on changes in the environment. Portfolio choices such as divestitures, mergers, and acquisitions are critical to strategy, and a CEO must be personally involved with them.

Aligning organizational structure and culture. To foster appropriate decisions across the company, the organization's structure needs to be aligned with its strategy. Otherwise, the CEO will be drawn into endless adjudication among units. It can also become a big drain on the CEO and others if the organization is constantly lurching from one structure to another.

Culture—which encompasses an organization's values, beliefs, and norms—is another key CEO lever for reinforcing strategy and influencing how the organization as a whole goes about doing its work. CEOs can shape a company's culture in many ways, from the time they spend talking about it at various forums, to personally living the valued behaviors, to recognizing, rewarding, and celebrating those who exemplify the desired culture while taking corrective action with those who don't. It is the CEO's job to champion the organization's culture and constantly look for opportunities to strengthen it.

Designing, monitoring, and improving processes. CEOs must ensure that the company's strategy is being well executed. This will occur when the organization has rigorous processes through which work—such as marketing plans, pricing, product development, and strategy development itself—is done. Good processes bring together the best organizational knowledge and keep the CEO from continually having to override decisions.

Formal reviews are essential to monitoring whether the company is delivering the required process performance. Though these consume a quarter of a CEO's total work time, they allow CEOs to track progress, provide regular feedback, uphold high standards, and ensure timely course corrections. Reviews are also necessary to make sure that lessons learned are used to enhance the various processes through which work gets done.

However, excessive participation in reviews can get the CEO too involved in the company's operations and mired in unnecessary details. We talked a lot with the CEOs in our study about this problem. We have found, again and again, that many have a hard time shedding the COO or president roles they may have previously held. Some also forget that their senior team should bear the primary responsibility for many reviews and keep the CEO informed on a regular basis.

When CEOs fail to delegate reviews to direct reports who can handle them, they erode the autonomy and accountability of their management teams. That doesn't help CEOs get the best out of others.

Developing people and relationships. Building the company's leadership pipeline is an important CEO function in its own right. We have found that CEOs must be personally committed to and be involved in improving the quality of the company's leaders. They cannot just leave this task to HR. Leadership choices are also pivotal in shaping the company's culture. Who gets hired, promoted, or fired signals what is truly valued by the CEO and the company.

CEOs need to get the most out of an organization's talent, and to do that, they must forge personal connections. Our CEOs spent another quarter of their total work time in meetings that focused on building relationships. When trust is mutual, delegation comes more naturally, agreement is easier to reach, and less monitoring and follow-up are necessary. Good relationships also make people more likely to give you the benefit of the doubt when you need it—and to tell you the truth, which is invaluable at the top.

The time CEOs spend building social capital through a network of personal relationships has many benefits and is time well spent.

THEY ARE ALWAYS IN MEETINGS

CEOs attend an endless stream of meetings, each of which can be totally different from the one before and the one that follows. Their sheer number and variety is a defining feature of the top job. On average, the leaders in our study had 37 meetings of assorted lengths in any given week and spent 72% of their total work time in meetings.

Looking Beyond the Averages

How much do CEOs' practices differ? We've ranked the variation in their uses of time from the lowest to the highest.

Activity	Degree of variation (standard deviation/mean)	
Meeting time	0.14	LOW
Face-to-face interactions	0.14	LOW
Time with internal constituencies	0.14	LOW
Total workweek obligations	0.14	LOW
One-hour meetings	0.21	LOW
Scheduled time	0.22	LOW
One-on-one meetings	0.24	LOW
CEO-initiated meetings	0.28	LOW
Weekend days worked	0.31	LOW
Core agenda time	0.36	MEDIUM
Meetings per week	0.36	MEDIUM
Electronic communication	0.38	MEDIUM
Time with direct reports	0.39	MEDIUM
Functional and business-unit review time	0.41	MEDIUM
People and relationship time	0.44	MEDIUM
Strategy time	0.48	MEDIUM
Time on organizational structure and culture	0.54	MEDIUM
Spontaneous time	0.59	HIGH
Have-to-do time	0.59	HIGH
Time with other outside commitments	0.59	HIGH
Two-hour-plus blocks of alone time	0.70	HIGH
Time with rank-and-file employees	0.71	HIGH
Exercise time	0.89	HIGH
Time with investors	0.95	HIGH
Time with customers	1.10	HIGH

Making meetings shorter and more effective. CEOs need to regularly review which meetings are truly needed and which can be delegated, and to let go of ones they were accustomed to in previous roles.

They should also take a hard look at meeting length. In our study, meetings that lasted an hour accounted for 32% of a CEO's meetings, on average. Meetings that were longer accounted for 38%, and shorter meetings, 30%. We found that the length of meetings was often a matter of organizational or personal habit or both—a default length (like one hour) was the norm.

"Standard" meeting times should be revisited with an eye toward shortening them. Doing this can significantly enhance a CEO's efficiency. In our debriefs, CEOs confessed that one-hour meetings could often be cut to 30 or even 15 minutes. Another good way to streamline things is to reset meeting norms: Every meeting should have a clear agenda, and to minimize repetition, attendees should come prepared. Effective CEOs spread these meeting norms throughout the organization.

Some CEOs were worried that they might appear standoffish if someone asked for an hour and the CEO (or the EA) offered 30 minutes. But we have found that meeting length is worth confronting. "Whatever they ask for, cut it in half," said one CEO.

Another important meeting attribute is the number and composition of attendees. One-on-one meetings were the most common (accounting for 42% of CEOs' meetings, on average), followed by meetings with two to five participants (21%). Although every CEO had meetings involving large groups of 50 or more—like town halls, leadership offsites, or all-company meetings—these were infrequent (5% of meetings).

The emphasis on one-on-one and small group meetings makes sense for enabling delegation and relationship building, and allows confidentiality. But leaders should also look for opportunities to bring the right people together. An essential part of the CEO's role is to align various internal and external constituencies around a common understanding of issues, decisions, and action agendas. Having the right people in the room is a powerful way to build that alignment and avoid the need for repetitive, time-consuming interactions to bring everyone along.

Allowing for accessibility and spontaneity. The vast majority of our CEOs' time (75%, on average) was scheduled in advance. The CEOs initiated more than half (51%) of their meetings themselves.

While controlling the nature and number of meetings is essential, we also found that CEOs need to regularly set aside time for more spontaneous interaction (which represented 25% of their work time in our study). This frees up space for same-day appointments initiated by others, for opportune conversations or meetings, and for responding to unfolding events.

The amount of time our CEOs allowed for spontaneous meetings varied considerably, ranging from 3% to 61%. In our debriefings, CEOs who discovered that they had left little room for spur-of-the-moment meetings were often surprised and quick to recognize the need for change.

Spontaneity and accessibility enhance a CEO's legitimacy. Leaders whose schedules are always booked up or whose EAs see themselves as gatekeepers and say no to too many people risk being viewed as imperious, self-important, or out of touch. EAs play a key role in finding the right balance here.

Carving out alone time. It's also vital for CEOs to schedule adequate uninterrupted time by themselves so that they can have space to reflect and prepare for meetings. In our study, CEOs spent 28% of their work time alone, on average—but again, that varied a great deal, from a low of 10% to a high of 48%. Unfortunately, too much of this alone time (59% of it) was fragmented into blocks of an hour or less; too little (18%) was in blocks of two hours or longer. CEOs need to cordon off meaningful amounts of alone time and avoid dissipating it by dealing with immediate matters, especially their inboxes. This proved to be a common problem among the CEOs in our study, who readily acknowledged it.

Given that time in the office is easily eaten up, alone time outside the office is particularly beneficial. Long-distance travel out of contact with the office often provides critical thinking time, and many CEOs swear by it. To capitalize on it, CEOs should avoid traveling with an entourage.

THEY JUGGLE MANY EXTERNAL CONSTITUENCIES

While the CEOs we studied spent the majority of their time (70%, on average) dealing with internal constituencies, a good chunk (30%, on average) was spent with outsiders: 16% with business partners (such as customers, suppliers, bankers, investors, consultants, lawyers, PR firms, and other service providers), 5% with the company's board of directors, and 9% on other outside commitments (service on other boards, industry groups, dealing with the media and the government, and community and philanthropic activities).

External constituencies can be just as demanding as internal ones. Everyone wants to talk to the CEO, and dealing with external stakeholders is time-consuming. It often involves longer workdays and time away from headquarters and from home. There is a risk of drifting toward outside commitments less tied to company success.

Finding time for customers. Most of our CEOs were dismayed to discover how little time they spent with their customers—just 3%, on average. It surprised some even more to learn that this was less than the amount they spent with consultants. The scant time devoted to customers is partly a function of the huge scope of internal responsibilities: As an executive ascends from managing a line of business (which involves more-frequent customer contact) to the job of leading the entire company, it is natural for customer-facing time to decline.

Nonetheless, the CEOs in our study clearly felt that 3% was too low. Customers are a key source of independent information about the company's progress, industry trends, and competitors. In the B2B space, meeting with customers' CEOs is highly valuable, since peer conversations can be very candid. In B2C companies, there are also rich opportunities for customer contact. For retail CEOs, for example, store visits—especially unannounced ones—are an indispensable way to talk to regular customers, not just the company staff.

Some CEOs systematically schedule time with customers. The CEO of a financial services firm in our study, for instance, aims to meet face-to-face with one customer a day. A manufacturing CEO allocates two days a month to customer visits. Other CEOs try to build customer visits into their travel. A habit of some type seems to be the most reliable way to ensure enough customer time.

Limiting time with investors. On average, our CEOs spent only 3% of their total work time on investors. Most of them found this surprising; they tended to believe they spent more. But while more time is likely to be better when it comes to customers, the same is not true with investors. Too many

meetings with investors can easily become a time sink and can draw the CEO into trying to manage the stock price rather than focusing on business fundamentals. Staying in touch with a few key buy-side investors, doing quarterly calls, and holding an annual investor day may be all a CEO needs to do—unless, of course, the company is dealing with serious investor unrest or activism. By and large, the CEOs in our study seem to have discovered such focus over time, after getting caught up early in their tenures in too much investor relations.

Limiting unrelated outside commitments. There is a real risk that CEOs will get distracted by outside activities not directly connected to the business, where they are in high demand and which often involve worthy community and social issues. Such activities consumed an average of almost 2% of the work time of the CEOs in our study. While CEOs should give back to their communities and play the role of business statespeople, they should carefully restrict the hours they personally spend on such activities and on participating in business groups. Though the CEO's presence can be important, overseeing and managing such work does not require the CEO and can be delegated to direct reports, for whom it is motivational and provides professional development opportunities.

Finding time for directors. All our CEOs understood the importance of spending time with their boards. In our study, interacting with directors accounted for 5% of CEOs' total work time, or 41 hours a quarter, on average. But again we saw significant variation: One CEO spent six hours with directors; another spent 165.

A CEO must never forget that the board is his or her boss and that "managing up" is vital to success. However, that involves more than board meetings, committee meetings, and board retreats; CEOs must find time to build meaningful one-on-one relationships with individual directors. This is essential to take advantage of each board member's particular expertise and perspective. At board meetings, it's often not clear where each director is coming from, but that knowledge is crucial in crises and when dealing with controversial topics. CEOs also need to keep the directors well informed and engage with them between meetings through newsletters and updates. A common understanding and alignment with the board is important in periods of stress or market challenge.

It's vital for CEOs to block off meaningful amounts of uninterrupted time alone, to give themselves space to think, reflect, and prepare.

DIMENSIONS OF THE CEO'S ROLE AND INFLUENCE

The data on CEOs' time use reveals that the sheer complexity of their role—the myriad types of work, activities, and constituencies—is much greater than has previously been documented or perhaps even understood.

In examining the CEO's role, we have come to see that their work entails six dimensions of influence. Each involves a duality—a seeming contradiction, akin to yin and yang—that CEOs must manage simultaneously in order to be effective. (See the exhibit "Managing the Dimensions of CEO Influence.")

First, CEOs clearly have *direct* influence over many issues and decisions, as their numerous reviews and one-on-one meetings reveal. However, the inherent limits on CEOs' time and knowledge mean that much of their influence must also be *indirect*. Good CEOs are very much in charge but work through others using strategy, culture, and effective organizational processes that drive sound analysis and alignment across the organization. CEOs need to learn how to marry direct and indirect influence.

Second, much of a CEO's work necessarily involves *internal* constituencies and managerial tasks, and our data verifies the overwhelming amount of such work to be done. However, CEOs are unique in the degree to which they must also engage and influence numerous *external* constituencies and represent the company to the world. Effective CEOs connect their internal and external roles by bringing outside perspectives into the work of the company. They also need to make sure outside constituencies understand the company's work and value.

Third, much of a CEO's work is inherently *proactive*: It involves anticipating problems, gathering the facts, conducting analyses, and making sound and timely choices. Here, the CEO sets and drives the agenda. However, *reacting* well to unplanned and unforeseen events and crises is some of the most important work CEOs do. Choices here, and the CEO's personal presence or lack of presence, can have major consequences both outside and within the organization. Such periods can make or break a company and the CEO's own capacity to lead.

Fourth, while CEOs have a great deal of *leverage* to exert because of their position in the hierarchy and access to resources, they also face numerous—and often unrecognized—*constraints* and complexities in exercising that leverage. They are constrained in how often they can overturn decisions that have been brought to them for approval or how quickly they can drive changes without securing the support and buy-in of their senior team and board of directors. They must identify the group or people who are needed to bring about a change and then figure out

MANAGING THE DIMENSIONS OF CEO INFLUENCE

Chief executives exert influence along six dimensions, each of which involves a duality, or seeming contradiction akin to yin and yang. Managing these dualities simultaneously is a hallmark of effective CEOs.

DIRECT The CEO is directly involved in numerous agendas and makes many decisions.	**INDIRECT** The CEO also exerts much influence over the work of others, using integrative mechanisms, processes, structures, and norms.
INTERNAL The CEO works with the senior team and with employees at all other levels to get all the organization's work done.	**EXTERNAL** The CEO also engages myriad external constituencies, serving as the face of the company, and must bring these external perspectives to the organization.
PROACTIVE The CEO must articulate a sense of purpose, have a forward-looking vision, and lead the company to greater success.	**REACTIVE** The CEO must also respond to events as they unfold, from daily issues to full-blown crises that will prove to have a major impact on the company's success.
LEVERAGE CEOs' position and control of resources give them immense clout.	**CONSTRAINTS** CEOs are constrained by the need to build buy-in, bring others along, and send the right message.
TANGIBLE The CEO makes many decisions about concrete things like strategic direction, structure, resource allocation, and the selection of key people.	**SYMBOLIC** Much of CEOs' influence proves to be intangible and symbolic; their actions set the tone, communicate norms, shape values, and provide meaning.
POWER CEOs hold formal power and authority in the company that is reinforced by their competence and track record.	**LEGITIMACY** CEOs' influence also rests on legitimacy that comes from their character and the trust they earn from employees through their demonstrated values, fairness, and commitment to the organization.

how to win over the leader that will mobilize them. CEOs must find the right balance between taking full advantage of the leverage they possess, while being equally sensitive to the constraints they must navigate and the constituencies they must bring along. Otherwise, resistance will emerge and come back to bite them.

Fifth, while much of the CEO's influence is highly *tangible,* involving decisions about things like strategic priorities, budget targets, and people selection, some of the CEO's greatest influence is *symbolic.* This comes from the meaning people attach to a CEO's actions. What CEOs do (and don't do), including everyday things like how they dress, what cars they drive, where they park, where they eat, and whom they talk to and how—always sends implicit messages to the company and its constituencies. Everything a CEO does affects what the organization focuses on, its norms of behavior, and its culture and values. The symbolic effects of CEOs' choices can reach even further than their specific actions.

Sixth, CEOs hold a great deal of formal *power* and authority, and exercise it in the many ways we have described. However, power, authority, competence, and even results are insufficient to truly ensure their success. Effective CEOs combine formal power and authority with *legitimacy.* CEOs achieve legitimacy when employees believe in them as people and as leaders. They earn legitimacy in multiple ways—by demonstrating values, ethics, fairness, and a selfless commitment to the company and its people, among other things. Legitimacy gives rise to motivation that goes far beyond carrying out orders and can lead to extraordinary organizational performance. CEO time allocation, then, is not simply a matter of what happens in meetings and decision-making processes. It reflects the far broader set of ways in which the CEO as an individual engages with the organization and its people.

In managing across these six dimensions of influence, it is easy for CEOs to overlook the less direct, less top-down, less tangible, and more human aspects of their work. Without this awareness, though, CEOs give up some of their most powerful levers for driving change.

WHY GOOD LEADERS MATTER

Countless concepts, tools, and metrics have been developed to help leaders manage well. However, our study of what the CEOs of large, complex organizations actually do—as manifest in how they spend their time—opens a new window into what leadership is all about and into its many components and dimensions. Being the CEO is a highly challenging role, and it is difficult to do it well.

The success of CEOs has enormous consequences—good or bad—for employees, customers, communities, wealth creation, and the trajectory of economies and even societies. Being a CEO has gotten harder as the size and scope of the job continue to grow, organizational complexity rises, technology advances, competition increases, and CEO accountability intensifies. The ideas we have introduced here aim to provide current and future leaders, who must bear this enormous responsibility, with a broader understanding of their role and how to best use their most important resource: their time.

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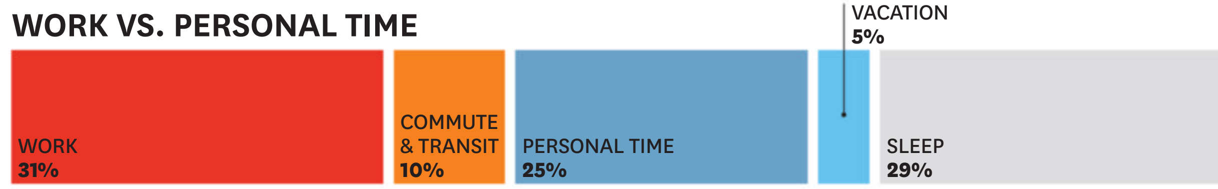
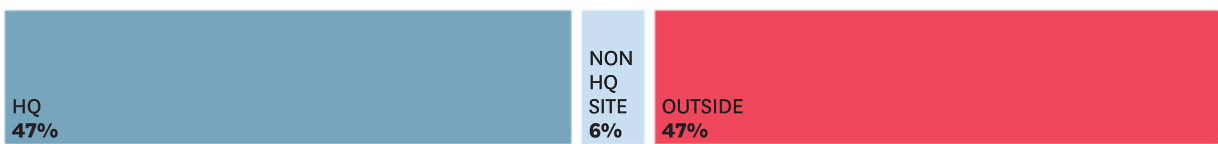
What Do CEOs Actually Do?

While we realize that corporate leaders are really busy, we know surprisingly little about their day-to-day schedules. To fill that gap, in 2006 Harvard Business School professors Michael Porter and Nitin Nohria began asking participants of their New CEO Workshop to track their use of time, 24/7, for 13 weeks. The data on these pages, which were created with assistance from Harvard Business School research associate Sarah Higgins, summarizes the information gathered on how 27 CEOs spent a total of nearly 60,000 hours. Here is how they allocated their time, on average, among various activities, places, priorities, meetings, and constituencies.

WORK VS. PERSONAL TIME



WHERE THEY WORK



MODE OF COMMUNICATION

CORE AGENDA VS. OTHER ACTIVITIES

CORE AGENDA
43%

IMPORTANT UNFOLDING DEVELOPMENTS
36%

HAVE-TO-DO
21%

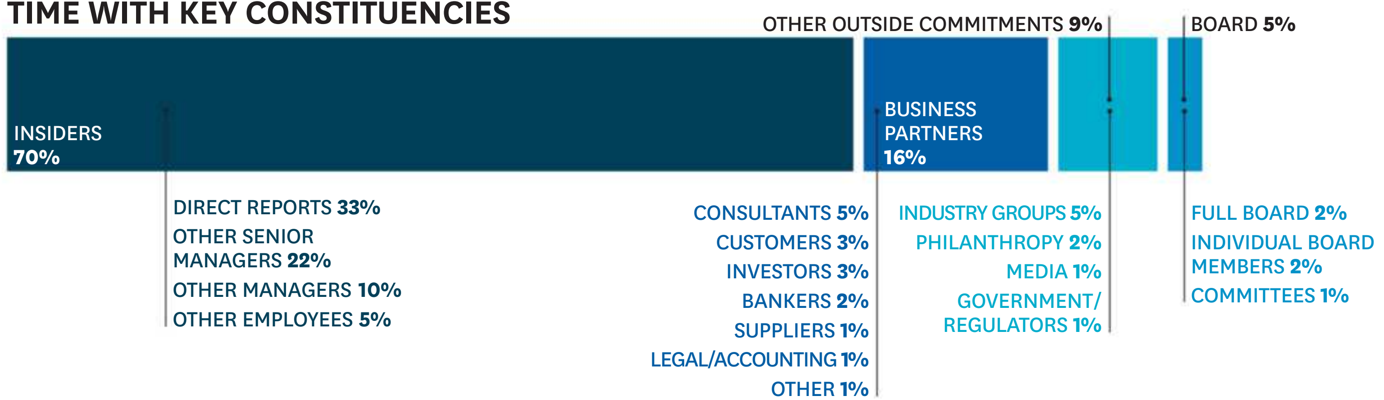
CONTENT OF WORK

LENGTH OF MEETINGS

SCHEDULED VS. SPONTANEOUS TIME

MEETINGS VS. ALONE TIME

TIME WITH KEY CONSTITUENCIES



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One CEO's Approach to Managing His Calendar

Tom Gentile spent 20 years as a senior executive at GE before becoming CEO of Spirit AeroSystems, a $7 billion aviation supplier. Seven months into the job, in 2017, Gentile and his assistant spent 13 weeks tracking his time as part of Harvard Business School's CEO Time Study, and discussed his results with the people leading the research, Michael Porter and Nitin Nohria. Gentile recently spoke with HBR's Daniel McGinn and HBS research associate Sarah Higgins about what he learned—and what behaviors he's trying to change. Here are edited excerpts from their conversation:

Earlier in your career, how did you learn to manage time?

GENTILE: Back in the 1990s, when I was a consultant at McKinsey, I remember trying to use the FranklinPlanner calendar system. It was manual and cumbersome—it was too thick to fit in my briefcase. Later I used a PalmPilot and then a BlackBerry, and now I use Outlook. The tools of time management have become much more effective during my career. But I really learned time management from my mentors, especially

at General Electric. I watched leaders who were good at it, and I emulated them. I remember one of my bosses, Dave Nissen at GE Capital Global Consumer Finance. He had so many demands on his time, but he set clear priorities, and he was ruthless about eliminating tasks that weren't important. He went home at a reasonable hour every night and took all his vacation days. He was incredibly effective. That's the model to which I've always aspired.

Did those methods work for you when you became a CEO?
They weren't enough at first, because the job was so much bigger. When I was leading business divisions at GE, I faced a lot of demands, but it's a different order of magnitude when you're a public company's CEO. All of a sudden you have board responsibilities, investor responsibilities, and many more media responsibilities. They take an inordinate amount of time. The requests keep coming in, and the schedule fills up so much faster.

What did you get out of tracking your time so closely for 13 weeks?
Having that detailed a record of how I use time and being able to benchmark myself against other CEOs was useful. Some of what I learned was quite surprising. For instance, I spend much less time one-on-one with my direct reports than the average CEO does, and I didn't know that. When I talked about my results with Michael Porter and Nitin Nohria, the Harvard Business School professors who are doing the study, it felt like a very intensive performance review. They were cordial, but they were very direct in their feedback.

Why do you spend less time with direct reports?
I tend to structure meetings with broader teams—people from multiple units or across geographies. So I do spend time with my direct reports, just not one-on-one time. I have monthly one-on-ones scheduled with every direct report, but they're busy, and I'm busy, so my assistant often cancels them for something more important. Porter and Nohria think that if I have more one-on-ones with direct reports, I will delegate more and hold them more accountable. We had a healthy debate about that, and as a result I have stopped canceling

A Week at a Glance

How Spirit AeroSystems' CEO spent seven days

For 13 weeks, Tom Gentile had his assistant record the way he spent each day across 60-plus variables, including whom he was with, where he was, and what he was focusing on. The charts below break his time use into seven core activities for one week. The charts on page 58 illustrate some of the recommendations on time management that Gentile received from the researchers.

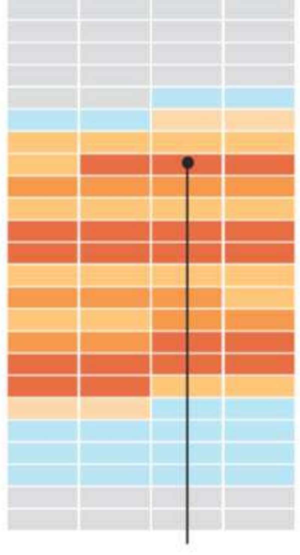
Monday

Met a customer and a board member in London and then flew to headquarters in Kansas, working en route

His average workweek, including commute and travel time, was **73.5** hours, compared with **62.5** hours for the average CEO.

Tuesday

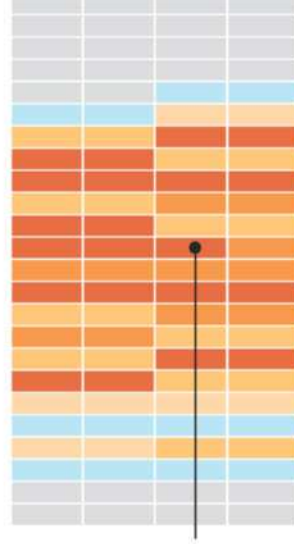
Led meetings at headquarters, including an employee strategy session, a job interview, and several sessions with investment bankers



He spent **33%** of his meeting time with large groups, compared with **15%** for the average CEO. He initiated **44%** of his meetings (whereas the average CEO initiates **51%**).

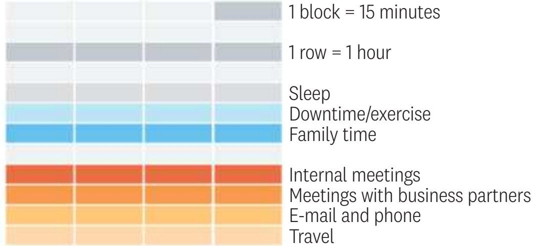
Wednesday

Held meetings at headquarters, including a media interview, a supplier meeting, and six sessions with employees



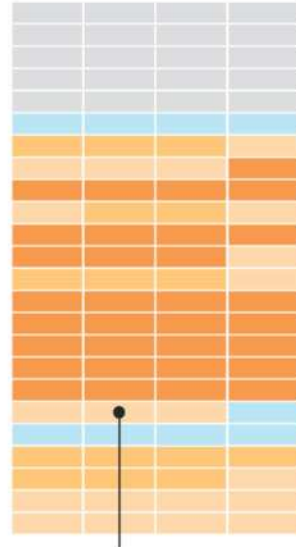
He spent **35%** of his working hours focused on people and relationships, compared with **25%** for the average CEO.

HOW TO READ THIS CALENDAR



Thursday

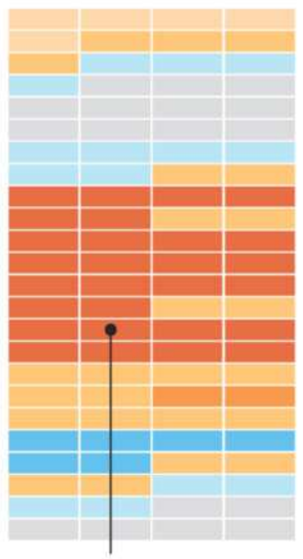
Flew from Kansas to visit two Midwest suppliers, golfed with a supplier in Oklahoma, and then took a weather-delayed flight to New York City



He took **16** business trips during the 13 weeks.

Friday

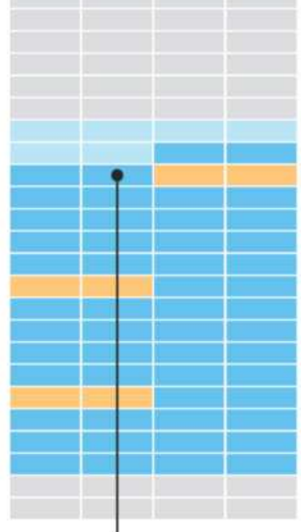
Attended his company's board meeting on less than three hours of sleep and then had dinner with his wife



He spent **3%** of his time with his board, compared with **5%** for the average CEO. He spent **43%** of that time talking with individual directors, compared with **38%** for the average CEO, and half of his board time meeting with the full group.

Saturday

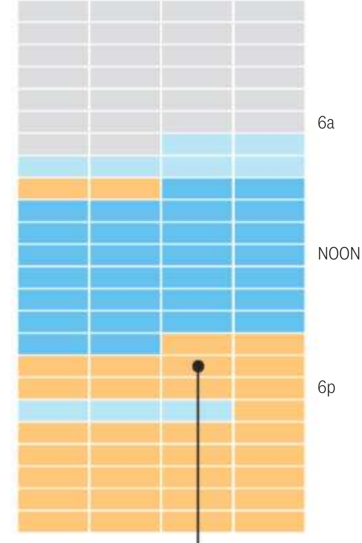
Spent time with family, with a few breaks for work e-mail



He spent **62%** of his nonworking awake time with his family, compared with **47%** for the average CEO. During the study his family time was concentrated in weekends and vacations because his family hadn't yet relocated to Kansas.

Sunday

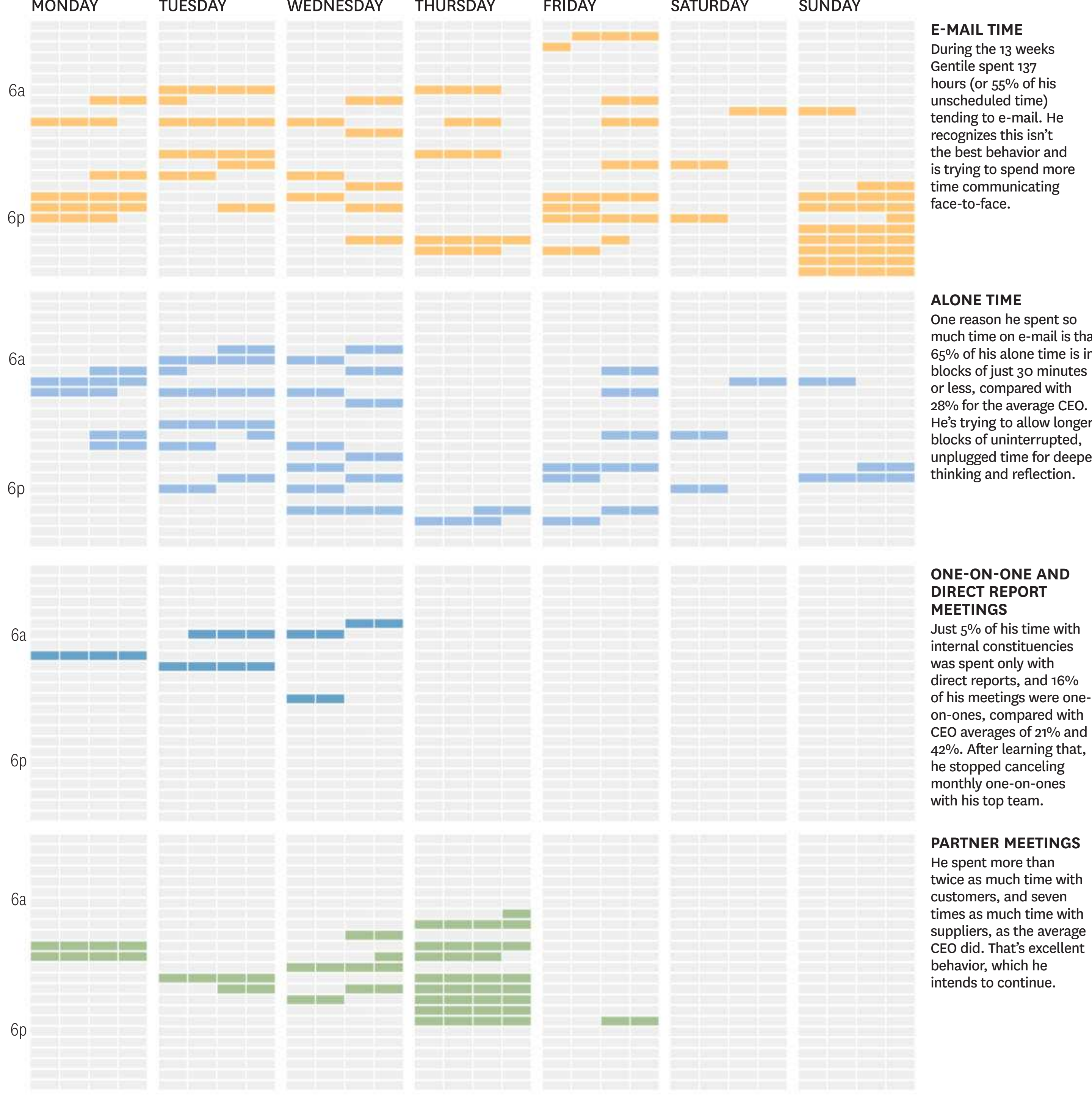
Spent time with family until leaving for the airport en route to Scotland at 3:30 PM



He did some work on **92%** of weekend days and on **100%** of vacation days, compared with CEO averages of **79%** and **70%**.

What He Learned

Analyzing how he spent time allowed Gentile to recognize and correct patterns.



E-MAIL TIME
During the 13 weeks Gentile spent 137 hours (or 55% of his unscheduled time) tending to e-mail. He recognizes this isn't the best behavior and is trying to spend more time communicating face-to-face.

ALONE TIME
One reason he spent so much time on e-mail is that 65% of his alone time is in blocks of just 30 minutes or less, compared with 28% for the average CEO. He's trying to allow longer blocks of uninterrupted, unplugged time for deeper thinking and reflection.

ONE-ON-ONE AND DIRECT REPORT MEETINGS
Just 5% of his time with internal constituencies was spent only with direct reports, and 16% of his meetings were one-on-ones, compared with CEO averages of 21% and 42%. After learning that, he stopped canceling monthly one-on-ones with his top team.

PARTNER MEETINGS
He spent more than twice as much time with customers, and seven times as much time with suppliers, as the average CEO did. That's excellent behavior, which he intends to continue.

the one-on-ones. We'll see if that makes a difference. They also suggested that business trips would be a good opportunity for these conversations. Our headquarters is in Wichita, which has limited airline service, so we rely on a private jet for a lot of travel. That can be a great setting for a one-on-one conversation.

you can't do that via e-mail. Professor Porter and Dean Nohria—who by the way was my organizational behavior professor when I was at HBS!—encouraged me to have more face-to-face time, more time to walk around. That was one of the big takeaways from the study. I also need to spend more time alone, thinking and

being proactive. My blocks of unscheduled time are too short for me to be reflective about big issues, and I tend to just go to my in-box. It's been hard to detach from the in-box, but I'm working on it. And I have been walking around our headquarters more.

"You can't let time management be a reactive process. You have to manage it from the top down, and you can't delegate it."

What else did the data show?
We noticed that my meetings are predominantly one or two hours. The good news is, I don't have many six- or seven-hour meetings, and I have fewer long meetings than the average CEO. But Porter and Nohria asked a good question: Why do you need an hour? Why can't your meetings be 45 minutes or even less? So we have started scheduling 45-minute meetings, from 1:15 to 2:00 PM, for instance. And we've continued our practice of having my executive assistant come in five minutes before the ending time to tell us to wrap up and keep us on schedule. I've found that if a CEO's meetings start running long, it creates scheduling problems for everyone in the organization.

The data shows you spend a lot of time on e-mail. Is that a problem?
Porter, Nohria, and I talked a lot about e-mail. I do spend too much time on that. E-mail is impersonal and reactive. CEOs have to stay human and be authentic, and you can't do that via e-mail.

Do CEOs really need lots of alone time? Aren't you always thinking about the business during idle moments—while driving or exercising or waiting for flights?
I do have time to reflect when I'm driving or when I'm on a plane without Wi-Fi. Setting aside time for thinking can be valuable. I do come up with ideas during those hours. And Porter and Nohria's broader point isn't just about time for reflection—it's about preserving time for spontaneity and not being overscheduled.

Can't your executive assistant help prevent overscheduling?
One of the things I learned from this process is that your assistant has to be a strategic partner. I now try to sit down with her on a regular basis, to make sure she knows what my priorities are. She also does small things that help. For instance, she blocks out all my time so that no one can look in Outlook and recognize that I have a free half hour and then request a meeting. She makes appointments at other people's offices, which forces me to get out of my office. She also schedules lunch for me every day. I always have a half hour. That's a healthy habit, so I don't miss meals, and it also allows me to grab somebody to talk with informally about an issue.

Speaking of healthy habits, did Porter and Nohria give you grief about lack of exercise?
Yes, they beat me up a little on that. I do need to schedule in time to exercise, which I haven't done in the past. I spent only 4% of my personal time during this period on exercise, which was lower than average—and to be honest, I'm lucky it wasn't 0%. They also pointed out that I don't spend enough personal time on hobbies. At this point, my only real hobby is golf, and I tend to play it mostly with customers and at industry events. I certainly wouldn't object to playing more!

You spend more time with customers than the average CEO does. What do you sacrifice to do that?
My focus on customers comes from my years at GE—leaders there spend a lot of time with customers. Jeff Immelt was a role model in that regard, the best I've ever seen. Our industry has a lot of events—association meetings, air shows—that everyone attends, and they can be a convenient way to see a lot of people. Going to them means spending less time at headquarters and delegating more to my team, but that's probably a good thing.

What do you tell up-and-coming leaders about time management?
Think about time very strategically, because it is part of your strategy. You can't let it be a reactive process that bubbles up from the bottom. You have to manage it from the top down, and you can't delegate it. And even in an age when e-mail is prevalent, you must be disciplined about communicating face-to-face in a way that lets people see you as genuine and approachable.

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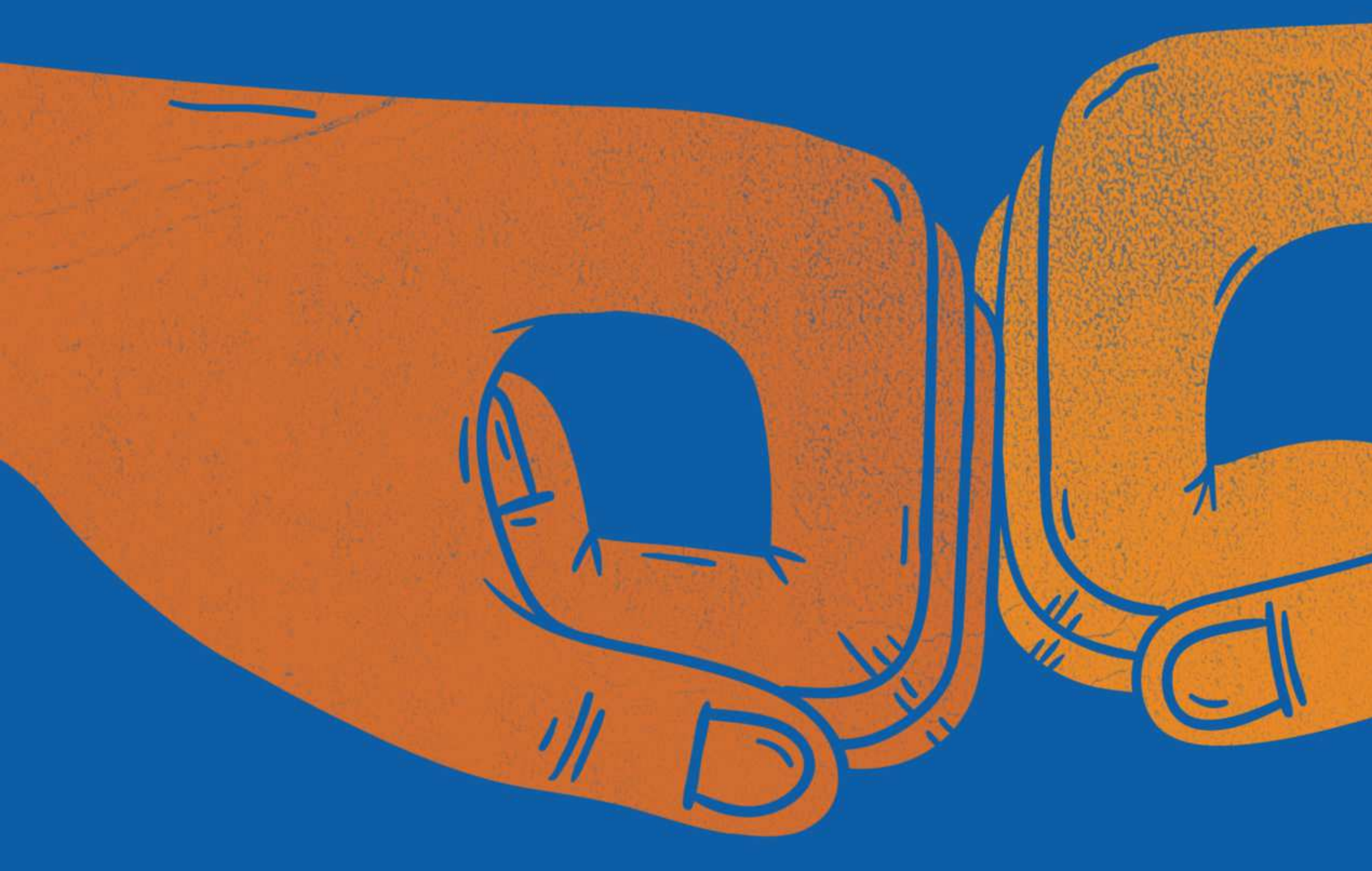

DO YOUR EMPLOYEES FEEL RESPECTED?

SHOW WORKERS THAT THEY'RE VALUED, AND YOUR BUSINESS WILL FLOURISH.

BY KRISTIE ROGERS

WHEN YOU ASK workers what matters most to them, feeling respected by superiors often tops the list. In a recent survey by Georgetown University's Christine Porath of nearly 20,000 employees worldwide, respondents ranked respect as the most important leadership behavior. Yet employees report more disrespectful and uncivil behavior each year.

What accounts for the disconnect? Although employees who aren't shown respect are acutely aware of its absence, people who feel respected on a regular basis—typically, those in managerial or other high-status roles—don't think about it very much. So leaders may simply be unaware of the problem. But research I've conducted shows that this is only part of the explanation. A bigger issue is that leaders have an incomplete understanding of what constitutes workplace respect—so even well-meaning efforts to provide a respectful workplace may fall short.

ILLUSTRATION BY MATTHEW TAYLOR WILSON

IN BRIEF

THE DEFICIT
A respectful workplace brings enormous benefits to organizations, but efforts to provide one often fall short. That's partly because leaders have an incomplete understanding of respect.

THE FIX
Research shows that employees value two distinct types of respect. *Owed respect* is accorded equally to all members of a work group or an organization. *Earned respect* recognizes individuals who display valued qualities or behaviors and acknowledges that each employee has specific strengths and talents.

THE IDEA IN PRACTICE
At Televerde, a technology-focused B2B marketing firm staffed by female prison inmates, regular displays of owed and earned respect have created an extraordinarily engaged workforce responsible for impressive profitability and growth. And recidivism among Televerde's inmate employees is 80% lower than the national rate.

My research indicates that employees value two distinct types of respect. *Owed respect* is accorded equally to all members of a work group or an organization; it meets the universal need to feel included. It's signaled by civility and an atmosphere suggesting that every member of the group is inherently valuable. In environments with too little owed respect, we typically see Tayloristic overmonitoring and micromanagement, incivility and abuse of power, and a sense that employees are interchangeable. *Earned respect* recognizes individual employees who display valued qualities or behaviors. It distinguishes employees who have exceeded expectations and, particularly in knowledge work settings, affirms that each employee has unique strengths and talents. Earned respect meets the need to be valued for doing good work. Stealing credit for others' success and failing to recognize employees' achievements are signs that it is lacking.

One of the subtler challenges in creating a respectful atmosphere is finding the right balance between the two types of respect. As Arizona State University's Blake Ashforth and I wrote in a recent paper, an imbalance can create frustration for workers. For example, workplaces with lots of owed respect but little earned respect can make individual achievement a low priority for employees, because they perceive that everyone will be treated the same regardless of performance. That could be the right mix for settings in which goals need to be accomplished as a team, but it risks reducing motivation and accountability. By contrast, workplaces with low owed respect but high earned respect can encourage excessive competition among employees. That may serve a purpose in environments, such as some sales forces, where workers have little interdependence or reason to collaborate. But it could hinder people from sharing critical knowledge about their successes and failures, and it often promotes cutthroat, zero-sum behavior. When they understand these nuances, leaders can craft an environment that is right for their situation—in most cases, one with high levels of both kinds of respect.

Because people's jobs are often central to who they are and how they perceive themselves, respectful cues in a professional setting are important signals of social worth. What's more, employees often join organizations in the hope of *developing* their identities over time, by growing professionally and becoming better versions of themselves. Respect is an important feedback mechanism and catalyst for this growth. Research by London Business School's Herminia Ibarra describes how new employees experiment with novel and often uncomfortable behaviors, gradually incorporating them into their "real selves." My research with Blake Ashforth and Arizona State University's Kevin Corley highlights this experimentation and finds that feeling respected at work validates those trial behaviors, helping employees go from thinking "this feels odd" to believing "maybe this is really me" and cementing their personal growth.

A respectful workplace brings enormous benefits to organizations. Employees who say they feel respected are more satisfied with their jobs and more grateful for—and loyal to—their companies. They are more resilient, cooperate more with others, perform better and more creatively, and are more likely to take direction from their leaders. Conversely, a lack of respect can inflict real damage. To quote from the best-selling book *Crucial Conversations,* "Respect is like air. As long as it's present, nobody thinks about it. But if you take it away, it's all that people can think about." Research supports this assertion, finding that 80% of employees treated uncivilly spend significant work time ruminating on the bad behavior, and 48% deliberately reduce their effort. In addition, disrespectful treatment often spreads among coworkers and is taken out on customers.

I spent 15 months studying a unique work program for female inmates of a state prison. Nowhere are the differences between a disrespectful environment and a respectful one clearer than in a setting where people shift back and forth each day between being inmates and being employees. Although outfitted in the same orange clothing for both roles, the women interact with others in vastly different ways.

EMPLOYEES WHO SAY THEY FEEL RESPECTED ARE MORE SATISFIED WITH THEIR JOBS AND MORE GRATEFUL FOR— AND LOYAL TO— THEIR COMPANIES.

HOW TELEVERDE BUILT A CULTURE OF RESPECT

TELEVERDE IS A technology-focused business-to-business marketing firm staffed largely by inmates. Shortly after its founding, in 1995, Jim Hooker acquired the operation—consisting of seven women in a single-wide trailer on the property of an Arizona women's prison—and took over as CEO. At the time, Televerde had one computer and no paying customers. Hooker recognized the potential to pair a need in the expanding tech market with the opportunity to provide valuable jobs for incarcerated women. The work entails calling businesses on behalf of Televerde's clients with the goal of making appointments with the client's sales team. In recent years the inmate employees have helped fuel an extraordinary run of profitability, and the company experienced a compound annual growth rate of 8.5% over the past decade. It now employs 650 people—425 of whom are inmates—and has nine call centers in the United States, Scotland, Argentina, and Australia. Perhaps most impressive, recidivism among its inmate employees is 80% lower than the national rate. Hooker's strategic genius was to recognize a need in the marketplace, but I believe it's his emphasis on owed and earned respect that has enabled Televerde's success.

Owed respect. I conducted 92 interviews and spent 185 hours observing operations in three of Televerde's call centers. Although I interviewed members at all levels of the organization, I focused on new employees, reasoning that respect dynamics would be most salient when the experiences were novel. Women arrive for their first day of work with their identities stripped and their self-worth diminished by months or years of prison life. While society in general devalues incarcerated women, stereotyping them as dangerous, evil, and bad mothers, Televerde communicates that they are valued and deserve the chance to be successful members of the business world.

Although all inmates are required to work, jobs vary in pay and prestige. Televerde pays up to the federal minimum wage of $7.25 per hour—significantly more than the pay for most prison jobs, such as kitchen work, cleaning, and landscaping. The orientation sessions I observed began with a discussion of the company's history and successes, including major accomplishments and awards described as resulting from the tremendous work of the women in the call centers. The newcomers were welcomed as "Televerdians" and told, "As soon as you come through that door, you are a coworker, not an inmate."

Employees are addressed in the most personal way permitted by prison regulations—"Ms. X," never "inmate" or as a number. Trainers and company leaders work at understanding their perspectives. I saw them explain complicated business concepts using scenarios that the women were likely to have encountered previously: For instance, they elucidated organizational charts using familiar restaurants as examples and discussed supply chain management in the context of dealing drugs.

Company leaders also communicate that newcomers are a high-priority investment. They describe the many opportunities for professional development, such as participation in specialized training sessions, professional book clubs, and a six-month series of workshops in the year prior to release, aimed at preparing women mentally, emotionally, and professionally for the transition. They tell workers that after release they may have the opportunity to work at the corporate office—and about 25% have done so. The women can also apply for Televerde scholarships toward higher education. As a final project for the two-week classroom training I sat in on, each new employee presented a business plan, building a hypothetical company around an idea or a passion. Televerde managers, directors, and executives attended the presentations.

Leaders are also intentional about how they present employees to outsiders. When existing or potential clients visit the call centers, managers speak about the professionalism, passion, and competence of the staff. Recalling her experience joining Jim Hooker in a meeting with a client group, one employee said, "He sat there just like a proud father....He did not

interrupt. He didn't correct. It was very respectful, and he totally trusted us to carry out an intelligent conversation with the clients."

Owed respect permeates the culture. Other inmate employees communicate their support for and availability to all newcomers—for example, by offering to help them understand training materials after work hours or by sharing stories of how steep the learning curve was for them. In one call center, experienced employees organized a social afternoon with the newcomers. Members of the two groups learned about one another, shared tips for navigating life in the call center, and discussed their evolving career aspirations.

This owed respect is strengthened by artifacts in the workplace that remind employees of their value—for example, a signed poster from a client company's celebrity CEO thanking employees for their outstanding work. The workspace is designed to minimize differences in status: Newcomers, experienced employees, and managers sit in identical cubicles near others working on the same project, and it's understood that questions from newcomers are not a disruption.

These practices establish and reinforce an authentic, consistent foundation of owed respect for all staff members. Here's how one employee described it: "At Televerde you are treated like an adult. You are going to be acknowledged as a human being, someone of value, someone who has worth." Over time it became apparent to me that the consistent experience of owed respect is a driver not just of employee well-being but also of the company's high performance.

Earned respect. Establishing and upholding a high level of earned respect for the inmate employees requires managerial creativity, because prison restrictions stipulate that they may not be given raises, bonuses, or promotions. Instead, from day one of the hiring process they must clear specific hurdles, such as passing a typing test and successfully completing a phone interview. Such milestones continue throughout the training. In the sessions I observed, they took the form of exams, a business plan presentation, and sales calls with mentors, with each small victory providing an opportunity for employees and managers to formally recognize the newcomers' achievements.

Newcomers also participate in frequent one-on-one feedback sessions with a corporate or an inmate employee trainer. Trainers at both levels emphasized to me the importance of being honest in these sessions and never giving undeserved praise. Consistent feedback continues after training is complete, through a quality control process in which accomplishments are recognized and developmental feedback is provided. Managers relay positive feedback from clients and prospects, giving employees reinforcements of respect from beyond the prison walls.

Televerde also publicizes employee achievements internally. Whenever an employee secures a sales lead, she rings a bell—the signal for peers and managers to applaud. (The first time an employee rings the bell, I was told, she gets a standing ovation.) Managers and trainers award certificates celebrating outstanding performance—for example, when a worker reaches a threshold amount of revenue generated. The women proudly display these certificates in their cubicles.

In addition, managers make individual performance transparent to other employees. In some cases, performance goals and each employee's progress toward them are written on a whiteboard visible to the whole team. This transparency lets employees connect expressions of earned respect, whether directed toward themselves or toward peers, to specific achievements. It also encourages employees to measure their performance against an objective standard instead of through comparisons to other employees, which in this context would be likely to promote competition and undermine cohesion and civility.

Employees view these ongoing expressions of earned respect as crucial to their performance. "It's because of that respect…that we gain confidence," one told me. "And the more confident you become inside, the more confident you sound on the phone.… So of course that brings more success and then more confidence, and it feeds on itself in a positive snowball effect."

Identity development. One of the most significant takeaways from my Televerde study is the importance of respect to employees' sense of self. The workers I observed progressively saw themselves less as inmates and more as professionals. On their first day, a company leader told them that regardless of past choices, they had an opportunity to make better ones. Hearing that "wearing orange is not who you are" challenges newcomers to distance themselves from past decisions and prison life, while the foundation of owed respect makes it clear that they are viewed as having intrinsic worth. This establishes a safe environment in which they can experiment with their identities.

THE WORKERS I OBSERVED AT TELEVERDE PROGRESSIVELY SAW THEMSELVES LESS AS INMATES AND MORE AS PROFESSIONALS.

TELEVERDE MAY OPERATE IN AN UNUSUAL CONTEXT, BUT ITS EMPLOYEES' NEED FOR RESPECT IS UNIVERSAL. THE IMPULSE TO IMPROVE IS AT LEAST AS STRONG AS OUR BASIC PHYSICAL NEEDS.

The women told me that the inmate experience reduces them to the least common denominator. "You're made to feel very small; you're made to feel like a number," one said. Their experience at Televerde stands in stark contrast. The company doesn't tell them to leave their old selves behind and try to fit some prototype for a successful employee; instead it encourages them to identify and build on their unique attributes and strengths. One of the first training exercises I observed helped employees determine their own dominant personality traits and see how those related to their work; the trainer explained how each trait could contribute to success. These early expressions of earned respect for diverse traits help employees envision who they might become at Televerde and as professionals more generally.

Televerde invites experienced employees to speak at training sessions. I saw employees from the corporate office stop by to share their journeys, noting that they had started in the same seats the newcomers now occupied. I observed how these concrete examples of success and growth shifted newcomers' focus from their past selves to who they might become. In this environment, newcomers feel safe testing behaviors that might be taboo in a prison setting, and positive reinforcement from managers, coworkers, and clients gives them the confidence to grow and change. One employee said, "I've heard this from so many women, and I feel the same way: When you come to work here every day, you're not in prison. You're not wearing orange....I'm an educated, intelligent professional who has intelligent, educated conversations with vice presidents, CIOs, and directors of *Fortune* 500 and *Fortune* 1000 companies on a daily basis. *That's* who I am."

Televerde may operate in an unusual context, but its employees' need for respect is universal. The impulse to improve is at least as strong as our basic physical needs, and for most of us it's a key driver when choosing an employer and engaging in a job. Few workers will experience the transformation from inmate to professional, but every worker has room to grow in subtler ways, and that growth is important to both job satisfaction and performance. Employees are more likely to feel committed to an employer that enables them to flourish and progress.

What's more, many situations in traditional companies evoke feelings not unlike an inmate's uncertainty about her worth and her intensified need for respect. Consider someone working in a low-status occupation or for a company undergoing a change in leadership that raises questions about whether employees will continue to be valued. The need for both owed and earned respect—and the validation they confer—are key factors shaping workers' attitudes and behaviors across a variety of employment situations.

CLOSING THE GAP

IN ALL BUT the most toxic workplaces, building a respectful organization does not demand an overhaul of HR policies or any other formal changes. Rather, what's needed is ongoing consideration of the subtle but important ways in which owed and earned respect can be conveyed. Here are seven small ones leaders and managers can use to make an outsize impact on workers.

1

Establish a baseline of owed respect. Every employee should feel that his or her dignity is recognized and respected. This is especially important for lower-level workers. In a study of being valued or devalued at work, conducted by Jane Dutton (of the University of Michigan), Gelaye Debebe (George Washington University), and Amy Wrzesniewski (Yale), many hospital cleaners described seemingly subtle cues that prompted them to feel that their worth was enhanced or diminished. Some cleaners were never acknowledged by other staff members, making them feel invisible or as though they were looking in on hospital operations from the outside. Others reported a boost in energy and worth from a doctor's simply greeting them or holding a door. Even in prestigious companies, issues of owed respect are top of mind. An Apple sales associate described his first impression of the company's CEO in a 2011 blog: "For Tim Cook there are no dumb questions. When he answered me he spoke to me as if I were the most important person at Apple. Indeed, he addressed me as if I were Steve Jobs himself. His look, his tone, the long pause...that's the day I began to feel like more than just a replaceable part. I was one of the tens of thousands of integral parts of Apple." Take a moment to consider whether your professional status is keeping you from perceiving a gap in respect, and note that simple acknowledgment or praise from a leader is often enough to make an employee feel valued.

Know how to convey respect in your particular workplace. Whether we are leaders or coworkers, we can all shape an environment where colleagues reinforce respectful cues and make social worth a day-to-day reality for one another. Research points to specific behaviors that convey owed respect, such as active listening and valuing diverse backgrounds and ideas. For leaders, delegating important tasks, remaining open to advice, giving employees freedom to pursue creative ideas, taking an interest in their nonwork lives, and publicly backing them in critical situations are some of the many behaviors that impart respect.

Pay attention to norms about how to convey respect; they may vary, even from one department to another. Perhaps people in your previous workplace signaled owed respect by exchanging morning pleasantries with colleagues, but those in your new workplace would find that a rude distraction during the critical start to the workday. Or maybe in your prior environment providing both praise and critical feedback during practice sessions for client presentations was considered an expression of earned respect, but your current colleagues would see that as offensive.

3

Recognize that respect has ripple effects. Leadership behaviors are often mimicked throughout an organization, and just as incivility can spiral, so too can respect. The cascade from the top down is also likely to shape the way employees treat customers, industry partners, and members of the community. It is no coincidence that in recent years Costco was both rated America's best large employer by *Forbes* and tied for "America's favorite retailer" in a survey by the American Customer Satisfaction Index. On the other end of the spectrum, companies at the head of "worst customer service" lists often top "worst places to work" lists as well.

4

Customize the amount of earned respect you convey. Beyond ensuring a baseline of owed respect, leaders can identify and tailor the mix of respect types that will best enable their employees to thrive. Although it's likely that a higher level of both owed and earned respect is needed, you might have reasons to emphasize one type or the other. Perhaps you've set a goal that requires a lot of collaboration and cohesion, warranting greater emphasis on owed respect. Alternatively, if your culture focuses largely on individual contributions, you might emphasize earned respect while ensuring that performance standards are transparent and direct employees' attention to objective deliverables rather than to subjective comparisons with peers. What form might such expressions of earned respect take? According to a McKinsey global survey of more than 1,000 executives, managers, and employees, praise from an immediate manager, attention from a leader, and opportunities to head a project have more impact on motivation than do monetary incentives.

5

Think of respect as infinite. Deciding when to bestow respect is not like making a judgment that requires dividing up a fixed pie (as when allocating time, pay raises, or attention, for instance), argue New York University's Steven Blader and Siyu Yu. Respect is not finite; it can be given to one employee without shortchanging others. This is true of both owed and earned respect: All members of an organization are entitled to the former, and all employees who meet or surpass performance standards deserve the latter. And an employee's place on the org chart makes him or her no more or less deserving of respect. Owed respect should be accorded to janitor and CEO alike, and earned respect should be based on meeting or exceeding standards specific to one's role.

6

See respect as a time saver, not a time waster. Conveying respect doesn't necessarily come at the expense of critical tasks. Christine Porath calls lack of time a "hollow excuse," pointing out that respect is largely about *how* you do what you're already doing. Jane Dutton agrees, suggesting that owed respect is best embedded in our normal interactions and can be as simple as communicating and listening in appreciative ways, being present to others, and affirming others' value to the company. Still nervous about losing time? The small additions to your day needed to convey respect could *save* you substantial amounts of time. Porath shows that neglecting respect can be far more costly than attending to it: Dealing with the aftermath of disrespectful behavior, she estimates, consumes seven weeks a year for leaders and executives in *Fortune* 1000 firms. The time and effort needed to recognize performance, greet others, or hold a door pale in comparison.

7

Know when efforts to convey respect can backfire. Attempts to demonstrate respect may cause more harm than good if they are inconsistent or haphazard. Employees are likely to perceive vague expressions by HR or high-level leaders that are not enacted day-to-day by managers and peers as manipulative or disingenuous. And if people are particularly respectful in some situations but not in others—for example, if a manager offers praise only in the presence (or absence) of senior leaders—their words will probably be viewed as insincere. Finally, you should guard against earned respect that is not actually deserved; it won't resonate. One Televerde employee put it this way: "It's not like you want constant empty compliments....I'm looking to give you a valuable job." Because employees see honesty as one of the most valuable expressions of respect, insincere compliments, however well-intentioned, are likely to be counterproductive.

DURING HER FIRST month at work, one Televerde employee I met said that she had never held a full-time job, had no idea how to talk to CEOs, and doubted that the job could be authentically "her." Nine months later she told me about supportive peers, accomplishments on several projects, and meaningful praise from her manager. She added, "I learned something, actually, since I made that statement [nine months ago]....You are what you make yourself, so [the job] is me if I want it to be." Finding the right people for the right jobs and coordinating day-to-day operations are a manager's solemn duty. As my research shows, however, the responsibilities don't end there: Managers must also build a workplace of respect that allows employees—and, as a result, their companies—to become the best possible versions of themselves.

HBR Reprint R1804C

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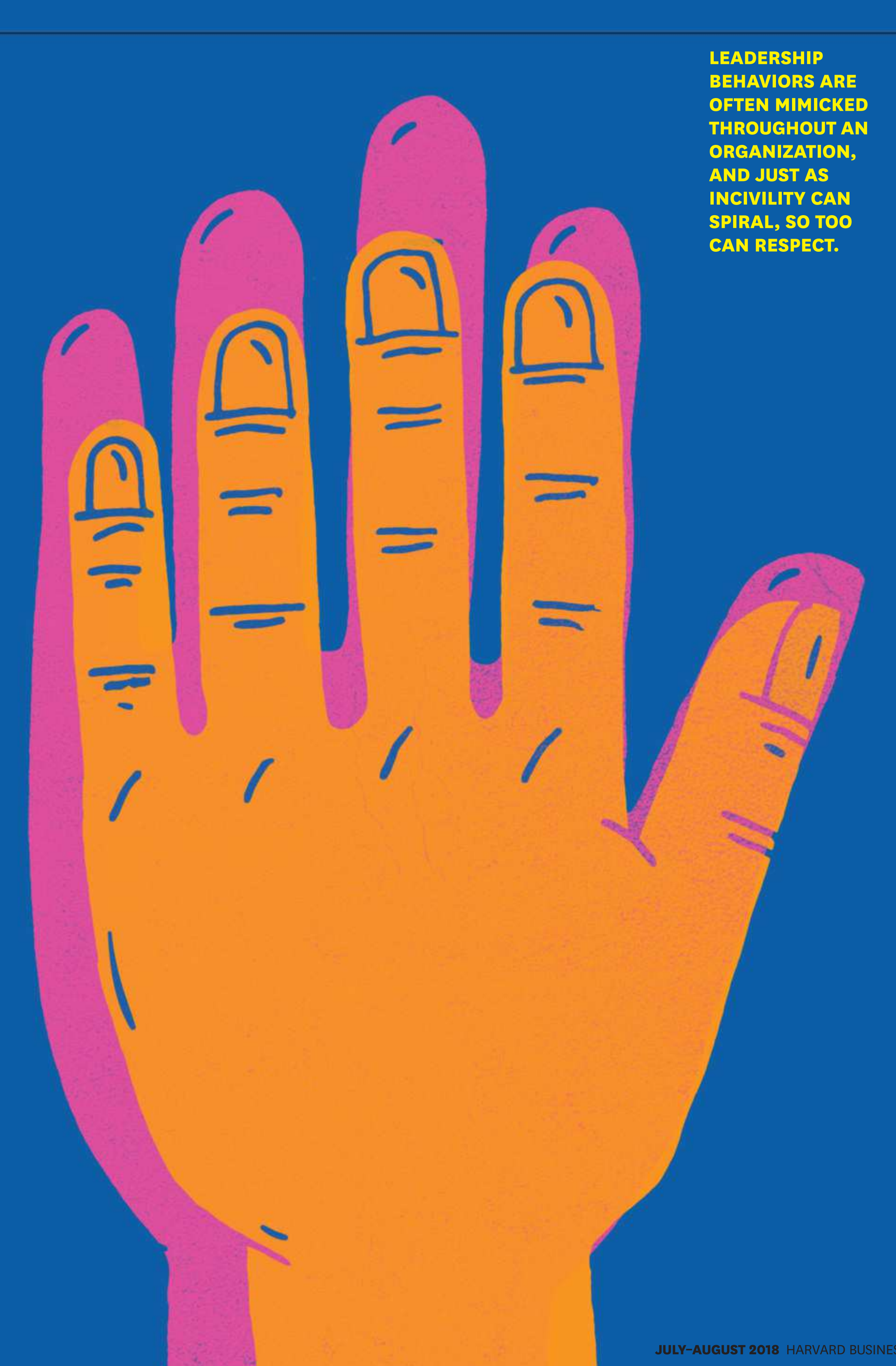

LEADERSHIP BEHAVIORS ARE OFTEN MIMICKED THROUGHOUT AN ORGANIZATION, AND JUST AS INCIVILITY CAN SPIRAL, SO TOO CAN RESPECT.

THE OTHER DIVERSITY DIVIDEND

WE KNOW THAT VARIED TEAMS MAKE BETTER DECISIONS.
A NEW STUDY SHOWS THEY ALSO MAKE BETTER INVESTMENTS.

BY PAUL GOMPERS AND SILPA KOVVALI

PHOTOGRAPHY BY ANDREW NGUYEN

hen managers and scholars talk about diversity's impact on organizations and teams, they're usually referring to the effects on collective accuracy and objectivity, analytical thinking, and innovativeness. On "harder" measures of financial performance, researchers have struggled to establish a causal relationship with diversity—particularly when studying large companies, where decision rights and incentives can be murky, and the effects of any given choice on, say, profits or market share can be nearly impossible to pin down.

So we've zeroed in on diversity's effects in the venture capital industry, which presents fewer barriers to understanding. VC firms are fairly flat in structure, composed primarily of investment partners and relatively few junior professionals. Every investor is a decision maker, and choices have clear business consequences. We know which firms make what investments, and for the most part we can identify the individuals leading those investments, because they usually take seats on the boards of portfolio companies. Using publicly available information, we can analyze VC professionals' "endowed traits," such as gender and ethnicity, and "acquired traits," such as schooling and work history. In other words, we can see how similar or different these decision makers are and compare the quality of their decisions on the basis of their investments' performance. Because their incentives are aligned and readily discernible—compensation for VCs is largely determined by profit sharing, ensuring that they and their investment partners have the same goals—the analysis is not clouded by inscrutable interests. The goal of every venture capital investor and firm is to choose and groom the companies that will yield the best possible outcomes.

All in all, we couldn't have asked for a better "lab rat" than the VC world. Over the past several years one of us (Paul Gompers) has examined the decisions of thousands of venture capitalists and tens of thousands of investments, and the evidence is clear: Diversity significantly improves financial performance on measures such as profitable investments at the individual portfolio-company level and overall fund returns.

IN BRIEF

THE PROBLEM
Researchers have struggled to establish a causal relationship between diversity and financial performance—particularly in large companies, where decision rights and incentives can be murky.

THE RESEARCH
The authors zeroed in on the venture capital industry, which presents fewer barriers to understanding: Every investor is a decision maker, and choices have clear business consequences. Incentives are aligned and readily discernible.

THE FINDINGS
The evidence is clear: Diversity significantly improves VCs' financial performance on measures such as profitable investments at the individual portfolio-company level and overall fund returns. The authors provide recommendations for reaping its business benefits.

And even though the desire to associate with similar people—a tendency academics call homophily—can bring social benefits to those who exhibit it, including a sense of shared culture and belonging, it can also lead investors and firms to leave a lot of money on the table.

In this article we'll describe the research behind those findings and provide recommendations for reaping the business benefits of diversity. Decision makers fare best when they openly acknowledge and address homophily early on, understand that small adjustments in mindset and behavior can have lasting ripple effects, and diversify their personal as well as professional networks.

THE IMPACT ON BUSINESS RESULTS

The gender and racial makeup of the venture capital industry is staggeringly homogeneous. A comprehensive data set of every VC organization and investor in the United States since 1990 shows that the industry has remained relatively uniform for the past 28 years. Only 8% of the investors are women. Racial minorities are also underrepresented—about 2% of VC investors are Hispanic, and fewer than 1% are black. Those groups have seen significantly increased representation in other fields and in advanced professional and scientific degree programs, but not in the VC industry. It's against that backdrop that venture capitalists choose their collaborators at other firms, investing their money side by side and joining the boards that guide the start-ups. Most investors specialize in a particular industry or sector, so potential partners are easy for researchers like us to identify: They are investing in the same types of deals at around the same time. And venture capitalists are far more likely to partner with people if they share their gender or race. They're also significantly more likely to collaborate with people if they share their educational background or a previous employer. Belonging to the same racial group increases the propensity to work together by 39.2%, and having a degree from the same school increases it by 34.4%. Not only is the likelihood of collaborating on any one deal greater, but VCs tend to keep teaming up with those who share their traits.

What does all that mean for performance? How do the financial outcomes of homogeneous partnerships compare with those of diverse collaborations? The difference is dramatic. Along all dimensions measured, the more similar the investment partners, the lower their investments' performance. For example, the success rate of acquisitions and IPOs was 11.5% lower, on average, for investments by partners with shared school backgrounds than for those by partners from different schools. The effect of shared ethnicity was even stronger, reducing an investment's comparative success rate by 26.4% to 32.2%.

To understand why homogeneous teams have worse investment outcomes, it's critical to determine exactly when decision making suffers. Interestingly, projects selected by both homogeneous and diverse sets of investment partners were equally promising at the time the decision to invest was made. Differences in decision quality and performance came later, when the investors helped shape strategy, recruitment, and other efforts critical to a young company's survival and growth. Thriving in a highly uncertain competitive environment requires creative thinking in those areas, and the diverse collaborators were better equipped to deliver it.

Of course, the industry's homogeneity is continually reinforced by individual firms' hiring decisions. Because these organizations are small (they usually have three to five investment professionals), and spots open up infrequently (every two to four years), even a slight preference for candidates who are similar to existing partners has a lasting effect. Here's just one example: Many prominent venture capital firms were founded by Harvard Business School alumni, and now nearly a quarter of all VCs with MBAs come from Harvard. To put that into perspective, only 9% of VCs with MBAs are from Wharton, and just 11% are from Stanford—both top-tier schools.

Prospects are even worse for female candidates. Remember that only 8% of venture capital investors are women. It's no wonder, since nearly three-quarters of VC firms have never hired a woman in that role. What separates that overwhelming majority from the firms that have hired women? One powerful factor is the gender of the partners' children. When a firm's partners have a higher proportion of daughters, the likelihood that a female investor will be hired goes up significantly. Simply replacing one son with a daughter would increase the probability of hiring a woman by 25%.

Of course, we aren't suggesting that male VCs should have daughters to reduce gender bias and increase diversity in their firms. But because the gender of one's child isn't a choice, the finding offers a tighter lens on diversity's effects. When the "daughter effect" does bring more women into the fold, it has a strong impact on performance. Venture capital firms that increased their proportion of female partner hires by 10% saw, on average, a 1.5% spike in overall fund returns each year and had 9.7% more profitable exits (an impressive figure given that only 28.8% of all VC investments have a profitable exit).

The economic impact of diversity isn't limited to the VC world. A recent NBER analysis of highly skilled occupations (in fields such as law, medicine, science, academia, and management) shows a positive relationship between diversity and the value of goods and services produced in the United States. The study looks at GDP trends beginning in 1960, when significant barriers prevented white women, black women, and black men from entering those professions. Though we're still nowhere near parity, gender and racial diversity have increased markedly in such fields over the past 50 years—and the U.S. economy has grown in that same period. Using a model that assumes innate skills are evenly distributed across gender and racial groups, the NBER analysis attributes about 25% of the GDP growth per capita to the uptick in white women and black Americans of both genders. In short, the authors argue, the United States began making better use of the talent at its disposal.

ONLY 8% OF VC INVESTORS ARE WOMEN. FEWER THAN 1% ARE BLACK.

REAPING DIVERSITY'S BENEFITS

Given that homogeneity imposes financial costs and diversity produces financial gains, a natural next step is to assess what managers can do to increase representation across groups. Here are some evidence-based recommendations:

Start early. Timing is a crucial and often overlooked factor. Founders and entrepreneurs in particular may place diversity low on their list of early priorities, viewing it as a concern that can be addressed once their firms have grown. But it is far easier to build a diverse organization from the ground up than to diversify a large, complex, homogeneous machine.

Stacy Brown-Philpot, the CEO of the freelance-job site TaskRabbit, made that point when she reflected

on her early days as a financial director at Google. "When I joined Google, it was 1,000 people," she said. "It took me two and a half years to look around and realize there weren't a lot of people like me. So [my colleague] David Drummond and I…put together a group. It was really late. I think that's part of the challenge [at Google]." When Brown-Philpot moved to TaskRabbit, she took a different tack with the young company, partnering with the Congressional Black Caucus's CBC TECH 2020 initiative to bring more black workers into the tech industry. In 2016 Brown-Philpot publicly committed to increasing TaskRabbit's black workforce from 11% to 13% of employees by the year's end, to ensure proportional black representation at the company.

Sociology scholarship underscores the flaws in a delayed approach. In one study researchers used e-mail as a proxy for social connections at a university. They discovered that over multiple "generations" of interaction, such as taking new classes or joining new activities, even minor individual tendencies to interact with similar people could have a large cumulative effect, resulting in striking levels of group homogeneity. The result suggests that an already homogeneous organization will tend to become even more so as it scales up. So it's important to encode diversity in a company's DNA at the earliest stages.

This is not to say, of course, that it's impossible to improve diversity in an established company. Standardized processes, such as blinding résumés during hiring and using objective metrics during performance reviews (as long as they're constantly refined through iterative development), can have a big impact in organizations looking to ameliorate bias. But when the teams developing and refining those processes are themselves unrepresentative of the broader universe of candidates, they must take special care to ensure that they aren't institutionalizing their individual biases.

Recognize that subtle, intentional shifts can have ripple effects. This is true not just in venture capital and entrepreneurship but in any setting where small groups of people wield outsize decision-making authority. Bringing just a few talented women or racial minorities into a group like that changes the relative balance of power. And recent findings suggest that if those individuals make hiring decisions, they will affect the group's future makeup. In an online simulation, participants were placed in "employer" and "potential hire" buckets. Choosing between one woman and one man, female employers hired the woman 50% of the time, while men hired her only 40% of the time.

That might be interpreted as evidence of affinity, suggesting that the homophilic biases that can hamper diversity when exhibited by overrepresented groups can bolster it when exhibited by underrepresented ones. Or the results might suggest that people who have been historically disadvantaged in recruiting are less likely to discriminate against those who share their endowed traits. Both explanations are probably true to some extent. But one of us (Gompers) actually found in a recent study that members of traditionally underrepresented groups were more likely than white men to seek out people unlike themselves when forming entrepreneurial teams. That result implies that qualified members of dominant groups aren't in much danger of being locked out of diverse organizations. Combined with the fact that group homophily tends to compound over time, it also suggests that if the goal is proportional representation over the long term, it's better to overcorrect for bias early on, by hiring more people from traditionally underrepresented groups, than it is to undercorrect.

To accomplish that, companies need not explicitly favor a particular race or gender when hiring. Sometimes simple adjustments in the selection process can increase diversity. In one study led by the behavioral economist Iris Bohnet, of Harvard Kennedy School, students were assigned the role of an employer asked to select an employee who would do well on a future math or verbal task. Even though gender was not predictive of performance, "employers" evaluating individual candidates were likely to be swayed by stereotypes, exhibiting a preference for women on verbal tasks and men on math tasks. But when they assessed two candidates side by side, gender suddenly became irrelevant. Evaluators instead focused on past performance—an actual indicator of future success.

We've seen similar results in blind evaluations of prospective hires. Most of us have heard that auditioning musicians behind screens has dramatically

increased the percentage of women who make the cut for symphony orchestras. Here's an example from another industry: When the political satire show *Full Frontal with Samantha Bee* was gearing up to hire writers, then-showrunner Jo Miller combined other shows' evaluation processes, making minor tweaks consistent with her goals. In a first-round call for script submissions, detailed formatting instructions were included so that superficial indicators of experience would not overshadow talent, taste, and potential. Those scripts were evaluated blindly, and an unusually large number of applicants made it to a second round, in which previous work and other factors, including gender and ethnicity, were considered. The result was a strikingly diverse team for late-night comedy: 50% women and 30% people of color.

Though these were basic process adjustments, another important ingredient is intention. Both Miller and Bee felt that a diverse writers' room was a priority for the show, given its subject matter and irreverence. The hiring process was deliberately designed to support that goal. But that's not the case in most organizations.

Consider the typical newsroom. The American Society of News Editors' 2017 Newsroom Employment Diversity Survey found that almost every major newspaper in the nation, from the *New York Times* to the *Boston Globe* to the *Washington Post,* is whiter than its audience city. When the *New York Times Magazine* reporter and 2017 MacArthur fellow Nikole Hannah-Jones was asked to offer advice to journalists of color in light of the troubling report, she instead issued a call to newsroom managers to examine whether "their stated goals are really their goals." She added: "If newsroom managers wanted diverse newsrooms, they'd have diverse newsrooms."

Other prominent figures in the media shared this assessment. The *New York Times* columnist Charles Blow reflected in a recent tweet, "As a newsroom manager from age 25 to 37, [I] was always struck by how the 'soft skills' [people] favored were in many ways culturally exclusive." The broadcast journalist and producer Soledad O'Brien passionately concurred. "It is not brain surgery," she noted.

Diversify beyond the workplace. Because social and professional circles often overlap, homogeneous personal networks can have a deleterious effect on organizational diversity. That's why some companies have deemphasized referrals, or at least cautioned against their pitfalls. But reliance on personal networking is still crucial to the functioning of certain industries. A survey of venture capitalists, for example, showed that social connections are essential to generating deal flow. But investors' personal networks tend to be closed, given that most VCs have the same educational background, are the same gender and race, and have worked at similar firms. Consequently, they can miss a lot of opportunities.

Though assigned mentorship and other professional programs can help decrease bias and increase diversity in organizations by exposing managers and employees to more people who are less like them, such relationships are by nature hierarchical and may actually aggravate individuals' prejudices. In one study, when white participants were assigned the role of "superior" over a black subordinate, their racial bias increased. Situational power in same-race pairs had no impact on racial attitudes.

At the individual level, extensive social contact on an equal footing is a better strategy for lessening bias. One representative study demonstrated that friendships with homosexual individuals were effective in reducing sexual prejudice. Another study found that white participants' friendships with Latinos or African-Americans reduced their implicit biases toward those groups.

The most generous interpretation of homophilic tendencies is that they arise from a seemingly innocuous desire to interact with people like ourselves. But the analysis of entrepreneurial team formation mentioned earlier revealed that endowed traits had a stronger homophilic "pull" than acquired traits. Social interactions can compel people to reevaluate what it means for someone to be "like them," beyond such easily discernible demographic indicators. The benefits of these interactions carry over to the workplace, where expanded networks and mindsets can improve both individual and organizational performance.

A willingness to openly recognize and tackle bias is at the heart of all our recommendations. When people choose to ignore bias or deny that it exists, they keep seeking out business partners, team members, and employees who share their traits, and they miss out on the quantifiable benefits of diversity.

Social science research suggests that people tend to react with anger and irritation when confronted about their biases—particularly when those biases are accurately labeled as such. Although such interactions may be unpleasant, they also tend to lead to behavioral change, and so should be welcomed as opportunities for growth. Bias is a measurable condition, but it is not a permanent one, on either the individual or the organizational level. By acknowledging it we can counter it, expanding our pool of potential collaborators and improving financial performance.

HBR Reprint R1804D

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CREATING A PURPOSE-DRIVEN ORGANIZATION

HOW TO GET EMPLOYEES TO BRING THEIR SMARTS AND ENERGY TO WORK

BY ROBERT E. QUINN AND ANJAN V. THAKOR

PAINTINGS BY GEOFF McFETRIDGE

When Gerry Anderson first became the president of DTE Energy, he did not believe in the power of higher organizational purpose.

We're not talking about having a clear mission that focuses largely on how a business will generate economic value. DTE had one that set out the goal of creating long-term gains for shareholders, and Anderson understood its importance.

A higher purpose is not about economic exchanges. It reflects something more aspirational. It explains how the people involved with an organization are making a difference, gives them a sense of meaning, and draws their support. But like many of the leaders we've interviewed in our research, Anderson started his tenure as president skeptical about how much it mattered. The concept of higher purpose didn't fit into his mostly economic understanding of the firm.

But then the Great Recession of 2008 hit, and he knew he had to get his people to devote more of themselves to work. Even before the financial crisis, surveys had demonstrated that DTE employees were not very engaged. It was a classic quandary: Employees couldn't seem to break free of old, tired behaviors. They weren't bringing their smarts and creativity to their jobs. They weren't performing up to their potential. Anderson knew that he needed a more committed workforce but did not know how to get one.

That was when retired army major general Joe Robles, then the CEO of USAA and a DTE board member, invited Anderson to visit some USAA call centers. Familiar with the culture of most call centers, Anderson expected to see people going through the motions. Instead he watched positive, fully engaged employees collaborate and go the extra mile for customers. When Anderson asked how this could be, Robles answered that a leader's most important job is "to connect the people to their purpose."

At USAA, he explained, every employee underwent an immersive four-day cultural orientation and made a promise to provide extraordinary service to people who had done the same for their country—members of the military and their families. That training was no small investment, since the company had more than 20,000 employees. Its lessons were continually reinforced through town hall meetings and other forums where people at all levels asked questions and shared ideas about how to fulfill their purpose.

Before the recession, Anderson would have rejected Robles's statement about purpose as empty, simplistic rhetoric. But having run into a dead end in figuring out how to make his own organization thrive,

Anderson was reexamining some of his basic assumptions about management, and he was open to what Robles was saying.

When Anderson returned to DTE's Detroit headquarters, he made a video that articulated his employees' higher purpose. (He got that idea from Robles, too.) It showed DTE's truck drivers, plant operators, corporate leaders, and many others on the job and described the impact of their work on the well-being of the community—the factory workers, teachers, and doctors who needed the energy DTE generated. The first group of professional employees to see the video gave it a standing ovation. When union members viewed it, some were moved to tears. Never before had their work been framed as a meaningful contribution to the greater good. The video brought to life DTE's new statement of purpose: "We serve with our energy, the lifeblood of communities and the engine of progress."

What happened next was even more important: The company's leaders dedicated themselves to supporting that purpose and wove it into onboarding and training programs, corporate meetings, and culture-building activities such as film festivals and sing-alongs. As people judged the purpose to be authentic, a transformation began to take place. Engagement scores climbed. The company received a Gallup Great Workplace Award for five years in a row. And financial performance responded in kind: DTE's stock price more than tripled from the end of 2008 to the end of 2017.

Why did purpose work so well after other interventions had failed? Anderson had previously tried to shake things up by providing training, altering incentives, and increasing managerial oversight, with disappointing results. It turned out that his approach was to blame—not his people.

That's a hard truth to recognize. If, like many executives, you're applying conventional economic logic, you view your employees as self-interested agents and design your organizational practices and culture accordingly, and that hasn't paid off as you'd hoped.

So you now face a choice: You can double down on that approach, on the assumption that you just need more or stricter controls to achieve the desired impact. Or you can align the organization with an authentic higher purpose that intersects with your business interests and helps guide your decisions. If you succeed in doing the latter, your people will try new things, move into deep learning, take risks, and make surprising contributions.

Many executives avoid working on their firms' purpose. Why? Because it defies what they have learned in business school and, perhaps, in subsequent experience: that work is fundamentally contractual, and employees will seek to minimize personal costs and effort.

Those are not necessarily faulty assumptions—indeed, they describe the behavior in many environments reasonably well. However, they also amount to a self-fulfilling prophecy. When managers view employees this way, they create the very problems they expect. Employees choose to respond primarily to the incentives outlined in their contracts and the controls imposed on them. Consequently, they not only fail to see opportunities but also experience conflict, resist feedback, underperform, and personally stagnate. So managers, believing that their assumptions about employees have been validated, exert still more control and rely even more heavily on extrinsic incentives. Employees then narrowly focus on achieving those rewards, typically at the expense of activities that are hard to measure and often ignored, such as mentoring subordinates and sharing best practices. Overarching values and goals become empty words. People do only what they have to do. Results again fall short of expectations, and managers clamp down further.

In this article we provide a framework that can help managers break out of this vicious cycle. In our consulting work with hundreds of organizations and in our research—which includes extensive interviews with dozens of leaders and the development of a theoretical model—we have come to see that when an authentic purpose permeates business strategy and decision making, the personal good and the collective good become one. Positive peer pressure kicks in, and employees are reenergized. Collaboration increases, learning accelerates, and performance climbs. We'll look at how you can set off a similar chain of events in your organization, drawing on examples from a range of companies.

AS EMPLOYEES JUDGED THE PURPOSE TO BE AUTHENTIC, A TRANSFORMATION BEGAN TO TAKE PLACE. ENGAGEMENT SCORES CLIMBED.

HOW TO DO IT

When organizations embrace purpose, it's often because a crisis forces leaders to challenge their assumptions about motivation and performance and to experiment with new approaches. But you don't need to wait for a dire situation. The framework we've developed can help you build a purpose-driven organization when you're *not* backed into a corner. It enables you to overcome the largest barrier to embracing purpose—the cynical "transactional" view of employee motivation—by following eight essential steps.

1. ENVISION AN INSPIRED WORKFORCE

According to economists, every employer faces the "principal-agent problem," which is the standard economic model for describing an organization's relationships with its workers. Here's the basic idea: The principal (the employer) and the agent (the employee) form a work contract. The agent is effort-averse. For a certain amount of money, he or she will deliver a certain amount of labor, and no more. Since effort is personally costly, the agent underperforms in providing it unless the principal puts contractual incentives and control systems in place to counter that tendency.

This model precludes the notion of a fully engaged workforce. According to its logic, what Anderson saw

at USAA is not possible; it would be foolish to aspire to such an outcome.

One way to change that perception is to expose leaders to positive exceptions to the rule. Consider this July 2015 blog post by Mike Rowe, host of the Discovery Channel show *Dirty Jobs,* about an experience he had at a Hampton Inn:

> I left my hotel room this morning to jump out of a perfectly good airplane, and saw part of a man standing in the hallway. His feet were on a ladder. The rest of him was somewhere in the ceiling.
>
> I introduced myself, and asked what he was doing. Along with satisfying my natural curiosity, it seemed a good way to delay my appointment with gravity, which I was in no hurry to keep. His name is Corey Mundle....We quickly got to talking.
>
> "Well, Mike, here's the problem," he said. "My pipe has a crack in it, and now my hot water is leaking into my laundry room. I've got to turn off my water, replace my old pipe, and get my new one installed before my customers notice there's a problem."
>
> I asked if he needed a hand, and he told me the job wasn't dirty enough. We laughed, and Corey asked if he could have a quick photo. I said sure, assuming he'd return the favor. He asked why I wanted a photo of him, and I said it was because I liked his choice of pronouns.
>
> "I like the way you talk about your work," I said. "It's not 'the' hot water, it's 'MY' hot water. It's not 'the' laundry room, it's 'MY' laundry room. It's not 'a' new pipe, it's 'MY' new pipe. Most people don't talk like that about their work. Most people don't own it."
>
> Corey shrugged and said, "This is not 'a' job; this is 'MY' job. I'm glad to have it, and I take pride in everything I do."
>
> He didn't know it, but Corey's words made my job a little easier that day. Because three hours later, when I was trying to work up the courage to leap out of a perfectly good airplane, I wasn't thinking about pulling the ripcord on the parachute—I was thinking about pulling MY ripcord. On MY parachute.

Corey Mundle is a purpose-driven employee. Instead of minimizing effort as a typical "agent" would, he takes ownership. The fact that people like him exist is important. When coaching executives on how to do purpose work in their organizations, we often tell them, "If it is real, it is possible." If you can find one positive example—a person, a team, a unit that exceeds the norms—you can inspire others. Look for excellence, examine the purpose that drives the excellence, and then imagine it imbuing your entire workforce.

2. DISCOVER THE PURPOSE

At a global oil company, we once met with members of a task force asked by the CEO to work on defining the organization's purpose. They handed us a document representing months of work; it articulated a purpose, a mission, and a set of values. We told them it had no power—their analysis and debate had produced only platitudes.

The members of the task force had used only their heads to invent a higher purpose intended to capture employees' hearts. But you do not invent a higher purpose; it already exists. You can discover it through empathy—by feeling and understanding the deepest common needs of your workforce. That involves asking provocative questions, listening, and reflecting.

Deborah Ball, a former dean of the School of Education at the University of Michigan, provides a good example. Like most companies, professional schools experience "mission drift." As a new dean, Ball wanted to clarify her organization's purpose so that she could increase employees' focus, commitment, and collaboration.

To "learn and unlearn the organization," as she put it, she interviewed every faculty member. She expected to find much diversity of opinion—and she did. But she also found surprising commonality, what she called "an emerging story" about the faculty's strong desire to have a positive impact on society. Ball wrote up what she heard and shared it with the people she interviewed. She listened to their reactions and continued to refine their story.

This was not just a listening tour. It was an extended, disciplined, iterative process. Ball says, "You identify gold nuggets, work with them, clarify them, integrate them, and continually feed them back." She refers to the process as "collective creation," borrowing a phrase from agile and design-thinking methodologies.

As that work continued, it became clear that the school had strengths it could use for social good. For example, it had the capacity to influence how other institutions around the world trained teachers, addressed issues of educational affordability, and served underrepresented populations. Ball concluded that these foci had the greatest potential to integrate faculty members' efforts, draw impressive new hires, and attract funding for research. So she highlighted them as crucial elements of the school's collective identity.

3. RECOGNIZE THE NEED FOR AUTHENTICITY

Purpose has become a popular topic. Even leaders who don't believe in it face pressure from board members, investors, employees, and other stakeholders to articulate a higher purpose. This sometimes leads to statements like the one produced by the task force at the oil company. When a company announces its purpose and values but the words don't govern the behavior of senior leadership, they ring hollow. Everyone recognizes the hypocrisy, and employees become more cynical. The process does harm.

Some CEOs intuitively understand this danger. One actually told his senior leadership team that he didn't want to do purpose work, because organizations are political systems and hypocrisy is inevitable. His

IN BRIEF

THE PROBLEM
You've surely seen this happen more than once: Employees get stuck in a rut, disengage from their work, and stop performing to their potential. So managers respond with tighter oversight and control, yet nothing improves.

THE REASON
Most management practices and incentives are based on conventional economic logic, which assumes that employees are self-interested agents. And that assumption becomes a self-fulfilling prophecy.

THE SOLUTION
By connecting people with a sense of higher purpose, leaders can inspire them to bring more energy and creativity to their jobs. When employees feel that their work has meaning, they become more committed and engaged. They take risks, learn, and raise their game.

statement illustrates an important point: The assumption that people act only out of self-interest also gets applied to leaders, who are often seen as disingenuous if they claim other motivations.

A member of the team responded, "Why don't we change that? Let's identify a purpose and a set of values, and live them with integrity." That earnest comment punctured the existing skepticism, and the team moved ahead.

For an illustration of a purpose that does shape behavior, let's look at Sandler O'Neill and Partners, a midsize investment bank that helps financial institutions raise capital. The company was successful in its niche and focused on the usual goal of maximizing shareholder value. However, on September 11, 2001, disaster struck. Located in the Twin Towers in New York, the company felt the full brunt of the terrorist attack. Jimmy Dunne, soon to lead the firm's executive team, learned that over one-third of Sandler's people, including its top two executives, were dead, and the company's physical infrastructure was devastated. Many of its computers and customer records were gone.

As the crisis unfolded, despite the exceptionally heavy demands of attending to business, Dunne made the decision that a Sandler partner would attend the funeral of every fallen employee, which meant that he attended many funerals. As a result of witnessing so much suffering, he began to realize that the purpose of his firm was not only to satisfy customers and create shareholder value but also to treat employees like valued human beings.

That led to some sharp departures from protocol. For example, he asked his CFO to pay the families of all the dead employees their salaries and bonuses through December 31, 2001—and then asked if the company could do the same for all of 2002. The CFO said the firm could survive, but doing this would be inconsistent with its fiduciary responsibility to the partners. So the firm offered to buy out the ownership stake of any partner at par. Not one accepted.

If your purpose is authentic, people know, because it drives every decision and you do things other companies would not, like paying the families of dead employees. Dunne told us that often an organization discovers its purpose and values when things are going badly—and that its true nature is revealed by what its leaders do in difficult times. He said, "You judge people not by how much they give but by how much they have left after they give."

AN ORGANIZATION OFTEN DISCOVERS ITS PURPOSE WHEN THINGS ARE GOING BADLY. ITS TRUE NATURE IS REVEALED BY WHAT ITS LEADERS DO IN DIFFICULT TIMES.

4. TURN THE AUTHENTIC MESSAGE INTO A CONSTANT MESSAGE

When we spoke with the CEO of a global professional services company about how to build a purpose-driven organization, his first question was "When will I be done?"

We responded by telling a story about another CEO, who had been trying to transform his construction company for a year. He showed us his plan and asked our opinion. We told him he deserved an A–. Why wasn't it an A? After giving speeches for a year, he thought he was finished—but his people were just beginning to hear his message. He needed to keep clarifying the organization's purpose for as long as he was CEO. When we told him that, he sank into his chair.

In contrast, Tony Meola, the recently retired head of U.S. consumer operations at Bank of America, is a leader who understands the ongoing nature of purpose work. He says one thing that makes it relentlessly difficult is that it involves getting institutions to shift direction—and existing cultures tend to impede movement. As extensions of the culture, managers, too, end up resisting the change. Other impediments are organizational complexity and competing demands.

Meola overcame those obstacles by clarifying the purpose of his division: treating operational excellence as a destination and allowing no other pressures to distract from it. He emphasized operational skills and leadership in employee training and development, and he brought that focus to every conversation, every decision, every problem his team faced, always asking, "Will this make us better operators?" He says, "When you hold it constant like that, when you never waver, an amazing thing happens. The purpose sinks into the collective conscience. The culture changes, and the organization begins to perform at a higher level. Processes become simpler and easier to execute and sustain. People start looking for permanent solutions rather than stop-gap measures that create more inefficiencies through process variations."

Embracing this mindset meant saying no to anything that didn't reflect it. In the division's call center, for example, there had been a proposal to invest additional resources in technology and people so that the group could solve customers' problems faster and better. But the project was rejected because when managers and employees used their stated purpose as a filter and asked themselves whether that investment would make them better operators, the answer was no. What the company really needed to do, they determined, was examine how the operations themselves could be improved to eliminate failures that produced call center inquiries in the first place.

When a leader communicates the purpose with authenticity and constancy, as Meola did, employees recognize his or her commitment, begin to believe in the purpose themselves, and reorient. The change is signaled from the top, and then it unfolds from the bottom.

5. STIMULATE INDIVIDUAL LEARNING

Conventional economic logic tends to rely on external motivators. As leaders embrace higher purpose, however, they recognize that learning and development are powerful incentives. Employees actually want to think, learn, and grow.

At the St. Louis–based not-for-profit The Mission Continues, whose purpose is to rehabilitate and reintegrate into society wounded and disabled war veterans, new hires are assigned a large amount of work. The underlying philosophy is that when a leader gives someone a difficult challenge, it shows faith in that person's potential. The job becomes an incubator for learning and development, and along the way the employee gains confidence and becomes more committed to the organization and the higher purpose that drives it.

By helping employees understand the relationship between the higher purpose and the learning process, leaders can strengthen it. People at The Mission Continues are required to reflect on that relationship often. Every two weeks they produce a written document describing their purpose, their strengths, and their development. The exercise is not repetitive, because the experiences change, as do the lessons learned. This practice is consistent with research on effective leadership development approaches. In modern organizations, new experiences tend to come easily, but reflection does not.

At The Mission Continues, the employees have become adaptive and proactive. There is less need for managerial control, because they know the purpose and see how it has changed them for the better. You can liken this clear sense of direction to "commander's intent" in the military. If soldiers know and internalize a commander's strategic purpose, they can carry out the mission even when the commander isn't there. This means, of course, that the leader must communicate the organization's higher purpose with utter clarity so that employees can make use of their local information and take initiative. Research by business school professors Claudine Gartenberg, Andrea Prat, and George Serafeim shows how critical this is in corporations, too—it is not unique to nonprofits.

6. TURN MIDLEVEL MANAGERS INTO PURPOSE-DRIVEN LEADERS

To build an inspired, committed workforce, you'll need middle managers who not only know the organization's purpose but also deeply connect with it and lead with moral power. That goes way beyond what most companies ask of their midlevel people.

Consider KPMG, a Big Four accounting cooperative with thousands of partners. For decades those partners approached leadership like accounting. They were careful in their observations, exact in their assessments, and cautious about their decisions, because that was the cultural tone set at the top. Senior leaders were not inclined to get emotional about ideals, and neither were the partners. As a result, employees at all levels tended to make only safe, incremental improvements.

But then KPMG went through a transformation. The company began to explore the notion of purpose. Searching its history, its leaders were surprised to find that it had made many significant contributions to major world events. After conducting and analyzing hundreds of employee interviews, they concluded that KPMG's purpose was to help clients "inspire confidence and empower change."

These five words evoked a sense of awe in the firm, but KPMG's top executives avoided the temptation to turn them into a marketing slogan. Instead, they set out to connect every leader and manager to the purpose. They began by talking openly about their own sense of purpose and meaning. When this had an impact, they recognized that the partners needed to do the same with their teams. When senior management shared these expectations, the partners were open to them but did not feel equipped to meet them. So the accounting firm invested in a new kind of training, in which the partners learned how to tell compelling stories that conveyed their sense of personal identity and professional purpose.

Though applying that training was difficult—it was a real stretch for experts in investment, real estate, tax, risk consulting, and so on—the culture did change. Today the partners communicate their personal purpose to their teams and discuss how it links to their professional lives and the organization's reason for being. In doing so, they are modeling a vulnerability

and authenticity that no one had previously expected to see at the middle levels of this accounting firm.

7. CONNECT THE PEOPLE TO THE PURPOSE

Once leaders at the top and in the middle have internalized the organization's purpose, they must help frontline employees see how it connects with their day-to-day tasks. But a top-down mandate does not work. Employees need to help drive this process, because then the purpose is more likely to permeate the culture, shaping behavior even when managers aren't right there to watch how people are handling things.

Our best illustration again comes from KPMG, where employees were encouraged to share their own accounts of how they were making a difference. This evolved into a remarkable program called the 10,000 Stories Challenge. It gave employees access to a user-friendly design program and invited them to create posters that would answer the question "What do you do at KPMG?" while capturing their passion and connecting it to the organization's purpose.

Each participating employee created a purpose-driven headline, such as "I Combat Terrorism," and under it wrote a clarifying statement, such as "KPMG helps scores of financial institutions prevent money laundering, keeping financial resources out of the hands of terrorists and criminals." Beneath the statement, the employee would insert his or her picture. Each poster carried the tagline "Inspire Confidence. Empower Change."

In June company leaders announced that if the staff could create 10,000 posters by Thanksgiving, two extra days would be added to the holiday break. Employees hit that benchmark within a month. But then the process went viral—after the reward had already been earned. Twenty-seven thousand people produced 42,000 posters (some individuals made multiple submissions, and teams produced them as well). KPMG had found a brilliant way to help employees personally identify with its collective purpose.

Once the firm's overall transformation had taken root, surveys showed that employees' pride in their work had increased, and engagement scores reached record levels. The firm eventually climbed 31 places, to the number 12 spot, on *Fortune*'s 100 Best Companies to Work For list, making it the highest ranked of the Big Four. Recruiting improved, and as turnover decreased, costs dropped.

8. UNLEASH THE POSITIVE ENERGIZERS

Every organization has a pool of change agents that usually goes untapped. We refer to this pool as the network of positive energizers. Spread randomly throughout the organization are mature, purpose-driven people with an optimistic orientation, people like Corey Mundle at Hampton Inn. They naturally inspire others. They're open and willing to take initiative. Once enlisted, they can assist with every step of the cultural change. These people are easy to identify, and others trust them.

We have helped launch such networks in numerous organizations, including Prudential Retirement, Kelly Services, and DTE Energy. Typically, at an initial meeting, senior leaders invite network members to become involved in the design and execution of the change process. Within minutes, there is buy-in. Regular meetings are scheduled. The energizers go out, share ideas, and return with feedback and new ideas. They're willing to tell the truth and openly challenge assumptions.

There is often another benefit, as the experience of one human resources director illustrates. After establishing a network of positive energizers in a major professional services firm, she called us to report that she felt overwhelmed—in a good way—by the interest and commitment of the people she had assembled. They were an amazing resource that, until now, had gone completely unrecognized. They cared as deeply as she did about the organization's purpose and getting colleagues to embrace it. She said, "I no longer feel alone."

ALTHOUGH A HIGHER purpose does not guarantee economic benefits, we have seen impressive results in many organizations. And other research—particularly the Gartenberg study, which included 500,000 people across 429 firms and involved 917 firm-year observations from 2006 to 2011—suggests a positive impact on both operating financial performance (return on assets) and forward-looking measures of performance (Tobin's Q and stock returns) when the purpose is communicated with clarity.

So purpose is not just a lofty ideal; it has practical implications for your company's financial health and competitiveness. People who find meaning in their work don't hoard their energy and dedication. They give them freely, defying conventional economic assumptions about self-interest. They grow rather than stagnate. They do more—and they do it better.

By tapping into that power, you can transform an entire organization.

HBR Reprint R1804E

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EVERY ORGANIZATION HAS A POOL OF CHANGE AGENTS THAT USUALLY GOES UNTAPPED. ONCE ENLISTED, THEY CAN ASSIST WITH EVERY STEP OF THE CULTURAL CHANGE.

WHEN TECHNOLOGY GETS AHEAD OF SOCIETY

Pioneering innovators need to build the institutions that allow them to succeed—and they can't do it alone.

BY TARUN KHANNA

SEAN GLADWELL/GETTY IMAGES

Drones, originally developed for military purposes, weren't approved for commercial use in the United States until 2013. When that happened, it was immediately clear that they could be hugely useful to a whole host of industries—and almost as quickly, it became clear that regulation would be a problem. The new technology raised multiple safety and security issues, there was no consensus on who should write rules to mitigate those concerns, and the knowledge needed to develop the rules didn't yet exist in many cases. In addition, the little flying robots made a lot of people nervous.

IN BRIEF

THE PROBLEM
Transformational innovations routinely run into barriers to adoption. They are difficult to regulate, overturn existing business models, and may even challenge social norms.

SOURCE OF INSIGHT
Entrepreneurs in emerging markets face the same institutional murkiness that tech innovators do. The most successful among them learn to create the conditions that allow them to succeed. Often that means weaving a new social and institutional fabric that benefits the entire ecosystem they work within.

EXAMPLE
The drone industry illustrates how the process might work for an emergent technology. Some players are helping governments develop smart regulations, others are experimenting with new uses, and still others are building nongovernmental institutions to support the industry.

Such regulatory, logistical, and social barriers to adopting novel products and services are very common. In fact, technology routinely outstrips society's ability to deal with it. That's partly because tech entrepreneurs are often insouciant about the legal and social issues their innovations birth. Although electric cars are subsidized by the federal government, Tesla has run afoul of state and local regulations because it bypasses conventional dealers to sell directly to consumers. Facebook is only now facing up to major regulatory concerns about its use of data, despite being massively successful with users and advertisers.

It's clear that even as innovations bring unprecedented comfort and convenience, they also threaten old ways of regulating industries, running a business, and making a living. This has always been true. Thus early cars weren't allowed to go faster than horses, and some 19th-century textile workers used sledgehammers to attack the industrial machinery they feared would displace them. New technology can even upend social norms: Consider how dating apps have transformed the way people meet.

Entrepreneurs, of course, don't really care that the problems they're running into are part of a historical

pattern. They want to know how they can manage—and shorten—the period between the advent of a technology and the emergence of the rules and new behaviors that allow society to embrace its possibilities.

Interestingly, the same institutional murkiness that pervades nascent industries such as drones and driverless cars is something I've also seen in developing countries. And strange though this may sound, I believe that tech entrepreneurs can learn a lot from businesspeople who have succeeded in the world's emerging markets.

Entrepreneurs in Brazil or Nigeria know that it's pointless to wait for the government to provide the institutional and market infrastructure their businesses need, because that will simply take too long. They themselves must build support structures to compensate for what Krishna Palepu and I have referred to in earlier writings as "institutional voids." They must create the *conditions* that will allow them to create successful products or services.

Tech-forward entrepreneurs in developed economies may want to believe that it's not their job to guide policy makers and the public—but the truth is that nobody else *can* play that role. They may favor hardball tactics, getting ahead by evading rules, co-opting regulators, or threatening to move overseas. But in the long term, they'd be wiser to use soft power, working with a range of partners to co-create the social and institutional fabric that will support their growth—as entrepreneurs in emerging markets have done.

The Roles of *Intermediaries* in Mature Settings

ROLE	FUNCTION	EXAMPLES
Credibility enhancer	Provides third-party certification of claims by suppliers or customers	Auditors ISO certification Education admission tests
Information analyzer and adviser	Collects and analyzes information on producers and consumers in a given market	Credit rating agencies Market research firms Publications that rank universities and professional schools
Aggregator or distributor	Provides buyers and sellers with low-cost matching and other value-added services, through expertise and economies of scale	Banks Mass retailers Universities
Transaction facilitator	Provides a platform for the exchange of information, goods, and services	Stock, bond, and futures exchanges eBay Executive recruiters
Adjudicator	Resolves disputes regarding law and private contracts	Courts and arbitrators Bankruptcy specialists Union arbitration specialists
Regulator or other public intermediary	Creates and enforces appropriate regulatory and policy frameworks	U.S. Securities and Exchange Commission U.S. Food and Drug Administration U.S. Equal Employment Opportunity Commission

SOURCE ADAPTED FROM *WINNING IN EMERGING MARKETS*, BY TARUN KHANNA AND KRISHNA G. PALEPU (HARVARD BUSINESS REVIEW PRESS, 2010)

What Emerging-Market Entrepreneurs Know

Let's look quickly at what I mean by institutional voids. Most entrepreneurs setting up a business in the United States or Germany can trust that an array of institutions will be in place to support them. For example, courts will uphold property rights, universities will provide a skilled workforce, and credit rating agencies will provide essential information about suppliers and buyers. The table "The Roles of Intermediaries in Mature Settings" lists typical institutional supports available in established markets.

Many of those supports don't exist in developing markets, though, so entrepreneurs need to either fill in some of the blanks themselves or work with others to do so. Successful emerging-market entrepreneurs actively shape the institutional context they work within, usually to the benefit of the entire system. Let's look at some examples.

One involves Charles Shao, who founded Huaxia Dairy Farm in 2004 in reaction to the quality problems endemic in China's agricultural sector. The country's regulatory structure was not robust enough to ensure that food was uncontaminated—and businesspeople knew they could get away with ignoring the regulations that did exist. In the wake of numerous damaging scandals, wealthier Chinese elected to purchase expensive products imported from other countries, but most consumers didn't have that option.

Shao resolved to go above and beyond the poorly enforced regulatory standards—in fact, he decided he'd try to meet the more stringent U.S. food safety standards. In an earlier life, he had worked in California's technology sector, from which he borrowed the idea of open-source information collection and sharing. Over time, Huaxia Dairy became known for giving away intellectual property and research to other farms—including competitors—to propel the whole industry forward. Working with Cornell University's College of Veterinary Medicine, Shao also

created free seminars with the aim of developing talent for a high-tech Chinese dairy industry. One of his goals was to make dairy farming "cool" so that top performers would be attracted to it. He thus became an aggregator of know-how and talent, in the absence of other intermediaries filling that role.

What Shao was doing, in essence, was trying to upgrade the entire institutional infrastructure. His efforts to exceed Chinese regulatory standards and his willingness to share best practices with competitors were not initially popular with his investors. But he persisted because he realized that unless quality standards improved throughout the industry, and unless the entire industry prospered, his business would eventually suffer.

Before Shao intervened, many agricultural businesspeople in China simply ignored regulations. Shao rejected such an approach, obviously. But he could have decided that lobbying the government to privilege his own efforts was his best strategy. Instead he chose a non-zero-sum approach that expanded the pie for everyone. Over time, independent certifiers of quality began to arise and act as credibility enhancers, filling another institutional void. The hope is that regulatory standards—and producers' and buyers' adherence to those norms—will also become stronger as time passes.

The story of Huaxia Dairy is not unusual. BRAC, the world's largest and arguably most effective NGO, has created a whole ecosystem of intermediaries in its quest to alleviate poverty. Founded by Fazle Hasan Abed in 1972, BRAC focused initially on using microfinance to rebuild communities in Bangladesh; the organization gave women small loans so that they could start businesses. It quickly became clear that the loans weren't going to be effective without numerous supporting institutions: There were immediate needs, such as a market to sell products into, and longer-term needs, such as primary education for the recipients' children and health care for their communities. I can't do justice to the whole story here, but suffice it to say that through both for-profit and nonprofit ventures, BRAC has achieved extraordinary results and is a trusted partner to even the most demanding of foundations. Note the word "trusted": I haven't observed any entrepreneurs who've forged a climate for success without also having earned the trust of other stakeholders in the system.

Recently I've been working with the business historian Geoffrey Jones to profile other entrepreneurs across the developing world who have created the conditions they needed in order to flourish. In many cases they set up structures or services that are normally provided by the government in more-developed economies, simply because they couldn't move forward without them. Mo Ibrahim, who founded the telecommunications company Celtel, had to install all of the foundational infrastructure, including wires and cables, before he could bring mobile phones to Africa. Roberto Angelini Rossi, chairman of the energy and natural resources company Empresas Copec, wasn't able to ensure reliable, continuous power supplies across Chile until his company had invested in roads and a large fleet of trucks.

As I've noted in other work, private entrepreneurs like those described above are partially providing public goods. Society benefits more from food safety standards, roads, and reliable power than any single consumer or company does, so the state has the biggest incentive to provide those goods. But if the state is defunct, compromised, incompetent, or just very poor, entrepreneurs like Charles Shao, Mo Ibrahim, and Roberto Angelini Rossi may fill some of the gaps—and still be better off than if they had not stepped up.

DE AGOSTINI PICTURE LIBRARY/GETTY IMAGES

What Can Tech Entrepreneurs Learn?

The knowledge that emerging-market entrepreneurs have gained can't simply be transferred wholesale to technology-based companies in developed markets. (Practices that are successful in one setting always need to be reimagined for a different setting, as I argued in a 2014 HBR article, "Contextual Intelligence.") That said, tech firms should remember the high-level lesson I took away from my research: They will

probably need to create (or help create) the conditions that allow them to succeed.

To see what that might look like, let's first examine a hybrid case with one foot in the developing world and the other in the developed world: modern medical tourism as practiced by an Indian health care network. The new "technology" here is a business-model innovation, not a scientific one, but it's an instructive case nonetheless.

Narayana Health is world-famous for having learned to do very low-cost, high-quality heart surgery at scale, profitably. That capacity enabled it to provide many of India's poorest citizens with access to cardiac care and heart surgery—and to build and operate hospitals, heart centers, and primary care facilities across the country.

Tech firms will probably need to create (or help create) the conditions that allow them to succeed.

In 2014 the organization launched a hospital in the Cayman Islands, a short flight from Miami. The near-term goal is to provide health care for people in the Caribbean, Mexico, and the rest of Central America. Eventually, more-affordable care can also be offered to some of the tens of millions of Americans who lack health insurance or are underinsured (the U.S. health care system has the highest fees in the developed world). In seeking to serve these new populations, Narayana Health faces an array of problems caused by a lack of institutional support. However, having dealt with similar challenges in India, company leaders are drawing on their experience as they proceed in the Caymans, and they're choosing to tackle certain challenges but not others:

- **Quality assurance.** One priority has been convincing non-Indian patients that Narayana offers world-class care. As it happens, the Joint Commission International, a U.S. entity that certifies hospitals outside the United States as high-quality care providers, has given the Cayman operation its stamp of approval, thus serving as a credibility enhancer. That will be important not just to patients but also to the insurance industry and to the first-rate medical practitioners the hospital hopes to attract.
- **Cultural brokerage.** Indian health care professionals understand the local context in India, naturally, but they don't have a visceral understanding of American, Caribbean, or Central American expectations when it comes to communicating with patients, the manner in which physicians work in teams with nurses and auxiliary staff, and so on. Narayana has invested in training to address those needs.
- **Logistical help.** Ensuring access to care for the target populations is another priority. Narayana has established protocols to minimize any trouble potential patients might have getting travel visas.
- **Payment options.** Narayana is still working to determine how the hospital will be paid for treating patients. In the case of Americans, mainstream insurers have taken a conservative, wait-and-see approach to covering services, so in the short run Narayana plans to work with large, self-insured corporations in the United States, which collectively account for about a third of the private health-insurance market. Over time, the data on performance should bring mainstream insurers on board. As for payment models for treating the uninsured, experimentation is still needed.
- **Means of redress.** Most medical tourists won't have any recourse if something goes wrong—no regulatory function crosses borders to protect patients from harm. Until an appropriate intermediary emerges, this will remain a problematic institutional void.

Narayana knows it can't plug every gap, but it isn't just in the business of providing care. In India its expenditures on direct services are nearly matched by the resources it puts into ensuring that people can use its services—and many of those latter investments benefit other players as much as they benefit the organization and its customers. In the Caymans, Narayana will make the same commitment to strengthening the institutional fabric, for its own good and for the public good.

Considering the Drone Industry

The institutional voids that Narayana Health confronts look simple compared with those dogging the drone industry. Military organizations around the

world have been using unmanned aerial vehicles for years, but commercial drone flight didn't become legal in the United States until recently. Companies in an array of industries were immediately interested in using these remote-controlled flying objects, which can take aerial photographs, help manage agriculture, deliver packages, and monitor infrastructure (to name just a few of the potential applications). But these uses raise numerous regulatory and other soft-infrastructural questions. The industry is still in its infancy, with the rules of the road only starting to emerge. Because of this immaturity—and complexity—the drone market provides a fascinating look at the issues facing many emergent technologies.

In the United States, the regulations are continuing to evolve. At first drone operators needed to seek approval from the Federal Aviation Administration for any specific application; observers refer to this as the FAA's "crawling" phase. We're now well into a "walking" phase: Applicants have been granted blanket exemptions as long as they follow some broad rules focused on risk avoidance: The drone must weigh less than 55 pounds, it can't fly at night, it needs to avoid restricted airspace, and it must remain within the operator's view. Individual exceptions are approved on a case-by-case basis, and the FAA has been reasonably flexible about allowing nighttime flights and other advanced operations when they don't appear to pose any risks.

The new regulations have made it possible for drones to be used in agriculture and aerial photography but not for the large-scale package delivery that companies such as Amazon and Google hoped for. That's because clear guidelines for flying beyond the line of sight have still not been established.

Things may change as the pas de deux between entrepreneurs and rule makers continues. Individual approvals to fly near large airports, for example, are already being granted more readily. Meanwhile, other operational questions remain murky. For instance, if a company uses drones to monitor corporate infrastructure, how does it spot and deal with an outsider's unauthorized drone flight over its assets?

One of many complicating factors is that the FAA has jurisdiction over national airspace—a system that has worked well for air traffic control in general. But with the advent of drones, the efficiency of a single regulator has to be balanced against local needs that are sometimes in contention. Local communities may be uncomfortable about, say, drones flying over schools or prisons, and most such jurisdictional boundaries haven't yet been addressed.

As the United States transitions into a "running" phase, the government is trying to up its game. The U.S. Department of Transportation and the FAA recently began a three-year pilot program aimed at accelerating their stewardship of the institutional infrastructure and learning whether state and local governments can regulate effectively. What's noteworthy is that the FAA will rely on the experiences of the drone makers and users to develop these rules. A similar process occurs when any new technology starts becoming mainstream: Done right, the creation of an institutional infrastructure is inherently a collaborative enterprise.

In the examples that follow, we'll see companies working both directly and indirectly to build that infrastructure—both within and beyond the United States. We'll look first at a U.S. company that emphasizes learning and lobbying, second at a different U.S. company experimenting with package-delivery methods in an emerging-market context, and third at a Chinese company focused less on regulation than on the development of a "commons" infrastructure.

Done right, the creation of an institutional infrastructure is inherently a collaborative enterprise.

AES: *Learning and Lobbying*

AES, a global power company headquartered in Arlington, Virginia, operates many generation and distribution facilities in 15 countries worldwide, with an extensive footprint across the Americas. In recent years it has become a pioneer in using drones of all sorts in the power industry: to monitor wind and solar plants, to access dangerous tunnels dug into mountains, to keep an eye on distribution facilities

in remote locations, and to ensure that transmission lines are not damaged by storms and natural disasters.

Creating a joint venture focused on learning. As the value of drones became increasingly clear—in terms of both operational efficiency and increased safety—AES decided to partner with a young drone-services provider, Measure, to develop and deploy intellectual property regarding the use of drones in the utility industry. Together they're figuring out how drones can help AES perform various tasks better. AES contributes specialized utility-related know-how about such matters as inspecting wind turbines, interpreting images of solar panels, integrating data from the drones into a utility workflow system, and responding to identified damage. Measure contributes expertise about the drones dispatched, the cataloging of drone flight records, best practices for safe and efficient operations, and the software architecture that governs the global deployment of drones across all AES facilities.

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AES benefits from this partnership by lowering its operating costs, spotting maintenance issues earlier, improving employee safety, and so on. Measure benefits because it can use the jointly developed intellectual property in its work with other customers, and its credibility as a provider of drone-related services has been enhanced by its association with the well-respected AES. Meanwhile, the knowledge the two companies amass together also pays dividends to the entire ecosystem.

Exploring the line-of-sight issue overseas. As already noted, the FAA has to date generally not permitted commercial drones to fly outside an operator's line of sight (LOS). Hoping to get data that will bolster the case for non-LOS flights, AES is using its presence in El Salvador and other countries to help Measure build a business outside the United States. El Salvador has allowed Measure to gain experience with non-LOS drone use at AES utilities.

This kind of overseas experimentation is useful for gathering evidence that can influence regulatory development in the United States. It also pressures U.S. regulators. Elaine Chao, the secretary of transportation, has said that the United States cannot fall behind other countries in this emerging space. The Transportation Department now appears to be engaging in a form of crowdsourcing by seeking comments and information from industry experts about which regulations need to be updated.

Using industry associations to lobby. AES is an active participant in the Edison Electric Institute, an association that educates and lobbies for its energy-industry members and thus functions as a transaction facilitator. Because this group is specifically focused on the power sector, it's a particularly effective resource for AES to leverage. In other industry organizations with many big-name players, AES's voice, and certainly Measure's, can be drowned out. The Association for Unmanned Vehicle Systems International, for instance, represents not only the drone industry but also Tesla, Ford, General Motors, and Uber—not to mention well-connected defense contractors such as Lockheed Martin and Boeing.

Zipline: *Experimenting*

Zipline, whose roots go back to the founders' time at Harvard College, started in 2011 in the Bay Area; it's a drone-delivery company focused on getting medical supplies to underserved markets in the developing world. It's working with other interested parties to achieve that goal.

Choosing a test case. In 2016 Zipline started using fixed-wing drones to deliver blood to remote hospitals in Rwanda. Poor transportation infrastructure and hard-to-reach areas, often many hours' drive from the capital, Kigali, mean that medical care is difficult to access in most parts of the country. But because Rwanda is small in land area and densely populated, a single drone launch site can serve a large number of its people.

Many aspects of medical care could be facilitated using drones. Zipline started with blood for several reasons: It's frequently needed (for example, to curb

maternal mortality resulting from hemorrhaging during childbirth); it has limited shelf life even if stored under sterile, refrigerated conditions; and the multiplicity of blood types adds to the challenge of keeping adequate supplies on hand. The economic value of Zipline's service will ultimately lie in reducing the enormous waste that accompanies poor (hard and soft) infrastructure—the financial and human costs of failed deliveries, expired goods, and so on.

Testing the service in a business-friendly environment. Rwanda's government runs in a centralized fashion under President Paul Kagame. Whatever its downsides, it is generally seen to be technocratic and business-friendly. The government has been willing to modify its civil aviation rules so that Zipline can function. Furthermore, although Zipline intends to develop an economically viable model that is not dependent on handouts, the government has guaranteed business to the company. For the state, this is sensible, since what it pays is determined by the market—that is, Zipline has contracted to be at least as cheap as the alternative of shipping blood by road, using motorcycles, over unforgiving terrain. The state's guarantee, coupled with Zipline's efficient operations, in turn reassures investors that the experiment is reasonable and will eventually be financially self-sustaining.

In fact, the business plan appears to be working. Since October 2016, Zipline has created a single base set up to deliver blood, platelets, and plasma to 21 transfusing facilities using 15 drones. It now delivers 40% of the blood needed outside Kigali. That figure will climb to 100% when Zipline opens its second base in Rwanda—a project that is under way.

Partnering with strategic investors. Part of the funding for Zipline's work in Rwanda has been provided by strategic investors, including the global logistics giant UPS, through its philanthropic foundation, and Gavi, the global nonprofit set up to promote and facilitate access to vaccines worldwide. UPS provides expertise in warehouse management and gains an understanding of the logistics of handling sensitive products in a context different from its home market. That knowledge enhances the understanding UPS gains from its other investments in drone-related uses as both a substitute for and a complement to existing package-delivery methods. Gavi, for its part, operates across the developing world and is interested in using drones to supply products that, like blood, require speedy delivery—such as the rabies vaccine after an animal bite. The skill sets and protocols learned through Zipline's Rwanda experiments will doubtless be useful in other countries with underdeveloped supply chains.

Expanding gradually into more-challenging markets. Other African countries are not typically as pro-business experimentation as Rwanda, but they have just as much need for better infrastructure. Zipline recently announced its expansion into nearby Tanzania. Because that country is far bigger, Zipline plans to set up five drone-launching bases that will reach 20% of the population. In a sense, the company has learned sufficiently from the Rwanda experiment to roll the dice again in this somewhat more complex setting. That, in turn, may position it to enter additional markets where cumbersome bureaucracy and stakeholders with vested interests in the status quo make regulatory experimentation less likely.

There's a lot more to the emerging "commons infrastructure"—the filling of institutional voids—than just laws and rules.

DJI: *Building a Commons*

People interested in the rapid growth of new technologies tend to focus disproportionately on the legal and regulatory issues they raise—and on the lobbying that inevitably comes with them. These laws and rules are, as the examples above show, responsive to practices that are shaped through the collective experimentation of diverse stakeholders. But there's a lot more to the emerging "commons infrastructure"—the filling of institutional voids—than just laws and rules. Shenzhen-based DJI, the world's largest drone

manufacturer, with 70% of the global market, is doing some of that work in the Chinese marketplace.

Creating a registry. DJI has taken on the task of "geo-fencing"—defining virtual perimeters for—certain regions that drones are forbidden from entering. It is working with the Chinese government to create, maintain, and update the necessary systems. In addition, DJI is collaborating with the government to establish a registry to keep track of drone operators' names and where drones are flying. This registry will function as a quasi-public good, acting as an information analyzer and thus enabling some authority to corral the various actors in the drone industry. But it would have been less likely to come into existence purely by regulatory fiat.

The need for a registry is actually identical to that in microfinance in many developing countries, as different as the two settings might seem. The Indian microfinance sector learned the importance of an industry-wide registry the hard way in 2010. Prospective lenders had no way of knowing the aggregate indebtedness of individual and typically penurious borrowers, some of whom had taken on excessive debt. As a result, the whole industry was badly overexposed and almost collapsed when some unscrupulous politicians got involved. Survivors of that experience now maintain a reliable registry.

Developing the workforce. DJI understands that a more professional workforce is needed to grow the drone industry as a whole. In 2016 the company set up a network of training centers in 60 cities around China, with short, affordable courses for would-be drone pilots. More than 200 professional instructors train aspiring operators in aerial photography, filmmaking, agriculture, and so on.

Just as there is a parallel between DJI's registry and the microfinance registry, there's one between DJI's efforts to develop talent for drone applications and the efforts made to develop talent for a high-tech Chinese dairy industry. That's because in both these emerging sectors, agencies to train specialist talent don't exist. Therefore, it has fallen to proactive entrepreneurs to fill that institutional void and take on an aggregator function.

AS THE DRONE industry continues to grow and mature, certain observations are worth keeping in mind:

- The knowledge and business models being developed by companies like AES (using drones to improve utility performance) and Zipline (using them to deliver medical supplies) are quasi-public goods. The corporate protagonists will have better access to what's been learned because of their firsthand experience (that's the private advantage they gain), but they are paving the way for other entrepreneurs, incumbent enterprises, civil society, and regulators to step in, mimic, and improve those practices. That's the "public goods" part.
- Entrepreneurs who develop quasi-public goods won't succeed in their efforts unless they're seen as trustworthy by other stakeholders in the ecosystem.
- It's rare that a single entity will be able to shape an emergent technology in isolation.
- Conventional, self-interested lobbying is inevitable and may even be necessary, but it's not sufficient. Emergent enterprises need to corral regulators and the state by working together, sometimes through industry associations, and by developing the data that the regulators will need. Hand-holding will work better than hardball, for the most part.
- Rules and laws aren't remotely the whole picture (though they're huge issues for many of today's emergent technologies). As DJI's and Narayana's experiences show, entrepreneurs must sometimes invest in training, intellectual property development, information collection and sharing, and other elements of a soft infrastructure.

Nobody knows enough right now to be a rule maker for the drone industry. Regulators have to accept their own inexperience and realize that the relevant expertise is being generated by the entrepreneurs making and using drones in a variety of ways. Entrepreneurs have to embrace the idea that they too are responsible for creating the soft infrastructure that will enable their success and that of their future competitors. The fabric of trust that's needed in an industry of this kind must be collectively woven. And industry leaders must also consider what nonregulatory institutions are needed and how they can be built.

Different emergent industries confront distinct challenges, of course. Huge online platform companies like Facebook, which turn out to be easily manipulated by unfriendly players, face one set of challenges. Autonomous vehicles, which are potentially safer than human-driven cars—but not unless their developers are extraordinarily cautious and risk-averse—face another. Companies that tinker with the genetic makeup of human beings face yet a third set of issues. But I suspect that the entrepreneurs behind those technologies would all benefit from reframing their challenges more broadly: They should become leaders *outside the bounds of their own companies* by building trust among stakeholders and helping to establish the institutions necessary for their success. Such advice runs counter to entrenched ideas about focusing only on your core business and on short-term value for shareholders. But if tech leaders take more responsibility for the whole ecosystem and bring regulators and consumers along with them, all of society stands to benefit.

HBR Reprint R1804F

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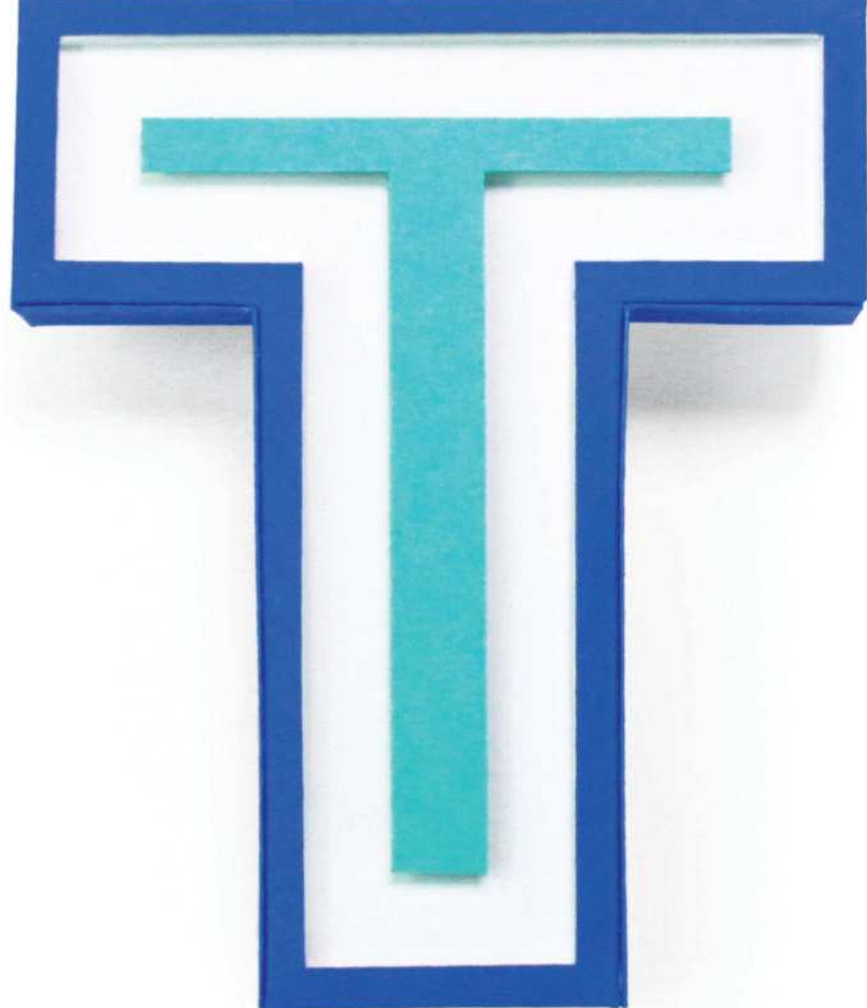
TRANSFORMING HEALTH CARE FROM THE GROUND UP

Top-down solutions alone can't fix the system.

BY VIJAY GOVINDARAJAN AND RAVI RAMAMURTI

ILLUSTRATION BY OLLANSKI



The U.S. health care system desperately needs reform to rein in costs, improve quality, and expand access. Federal policy changes are essential, of course; however, top-down solutions alone cannot fix a wasteful and misdirected system. The industry also needs transformation from the bottom up, by entrepreneurs and intrapreneurs—the kind of trailblazers we've been studying over the past several years. In our work, we've seen innovations championed by CEOs of start-ups who understand that needed reform is not going to come anytime soon from government regulators. We've also seen changes driven by doctors, nurses, administrators, employers, and even patients who are devising solutions to the problems they face every day in an ill-built system.

IN BRIEF

THE PROBLEM
The U.S. health care system needs reform, but too often experts focus on top-down solutions stemming from federal policy changes. Such efforts alone, however, cannot fix a wasteful and misdirected system.

A BOTTOM-UP APPROACH
What's needed is innovation driven by doctors, nurses, administrators, entrepreneurs, and even patients who are devising new solutions to daily challenges.

THE INNOVATORS
This article looks at two examples of bottom-up innovation, each involving a radical transformation of health care delivery. The University of Mississippi Medical Center (UMMC) created a homegrown telehealth network to increase patient access to care; Iora Health developed a new business model that doubled down on primary care to reap large savings in secondary and tertiary care.

In this article, we look at two examples of bottom-up innovation involving a radical transformation of health care delivery. The University of Mississippi Medical Center (UMMC) created a homegrown telehealth network to increase patient access to care; Iora Health developed a new business model that doubled down on primary care to reap large savings in secondary and tertiary care. To understand the strategies that drove each effort, we interviewed the organizations' principals, investors, and employees, along with other industry leaders, as part of our six-year study of innovations in health care delivery around the world. The results of these two initiatives were astonishing. Mississippi's telehealth network has saved lives and money and revived struggling rural hospitals and communities. Ten years out, satisfaction is high among patients (93.4%) and local hospital administrators (87.5%). Over seven years, Iora has reduced hospitalizations of its patients by 35% to 40% and lowered its total health care costs by 15% to 20%, while improving patients' overall health.

These successful initiatives—one from an incumbent health care provider and one from a business start-up—demonstrate the potential of creative leaders to reshape the U.S. health system. Let's look at each in turn.

INNOVATION BY INCUMBENTS: MISSISSIPPI TELEHEALTH

In 1999 Mississippi had only one top-tier hospital, the University of Mississippi Medical Center in Jackson, and 99 acute care hospitals, three-quarters of which were in rural areas. Many of those facilities were "critical access hospitals"—a Centers for Medicare and Medicaid Services designation for rural hospitals with no more than 25 beds and located more than 35 miles from another facility. The acute care hospitals had no medical specialists on staff, performed no surgeries, and even lacked labor and delivery units, as they had no obstetricians. By law, the critical access facilities could provide inpatient acute care only on a limited basis. Many lacked the imaging equipment required to diagnose emergent conditions, and not one of them had a ventilator. Patients requiring serious emergency care were often transported from those hospitals to UMMC, a solution as expensive as it was medically risky.

Kristi Henderson, UMMC's clinical director of nursing in the ER at the time, saw the overcrowding in the trauma center in Jackson and the endless stream of rural patients who had traveled some distance seeking care. Why not reverse the flow, she thought? Why not build capacity in the rural clinics by sharing the medical expertise concentrated at UMMC through a telehealth system?

A seasoned health care professional, Henderson knew that a state-funded, top-down telehealth effort was about as likely as a snowstorm in July. So she began to develop a pilot project to link the trauma team in Jackson with the primary care doctors and nurse practitioners who staffed most of the critical access hospitals. The local practitioners would process admissions, stabilize patients, perform simple procedures, order lab work and EKGs, and take basic images. The emergency team in Jackson would observe the patients on dedicated TV screens, read the X-rays and other images, diagnose the problems, talk the local practitioners through the treatment plans, and be available for follow-up care, either in person in Jackson or remotely through the network.

> AS UMMC'S INITIATIVE DEMONSTRATED, TELEHEALTH SYSTEMS SCALE EXCEPTIONALLY WELL.

This TelEmergency network would concentrate the scarcest expertise and equipment in the Jackson "hub," which handled advanced procedures, while the community hospitals would serve as gateways and service points ("spokes") for simpler procedures. The telehealth network would save money by reducing patient transfers and instead treating more people in local hospitals, where costs were as little as half those at UMMC. The network would also help keep small, financially insecure hospitals afloat by increasing their emergency room services and revenue streams.

As UMMC's initiative demonstrated, telehealth systems scale exceptionally well. Henderson began with three pilot community hospitals in 2003, and over the following 10 years, she expanded the program statewide, adding 14 more locations. In 2008, UMMC's telehealth network began expanding services beyond the ER, and today it provides 35 specialty services at more

than 200 hospitals and service centers, including schools and prisons, throughout Mississippi.

This is a dramatic example of effective bottom-up innovation. Henderson's experience working within the health care system gave her insight into the human, financial, and technology challenges that nurses and other health care professionals faced every day, and she methodically set about addressing them. She also brought to bear a trait we've seen in all the innovators we've studied: a constitutional inability to take no for an answer. Here's how she did it.

Assembling resources. Trained as a nurse practitioner, Henderson believed passionately in a collaborative model of health care delivery that respected the capabilities of all health care workers. But her enthusiasm was not universally shared. Before she connected her first local hospital, she spent three years persuading state medical, nursing, and pharmacy boards to give the telehealth network a chance. She listened and honed her case as the Mississippi medical establishment fretted about the quality of long-distance care, the reliability of technology, the ability of nurse practitioners to learn new skills, and the risk that telemedicine would cannibalize the practices of rural physicians.

Every incumbent innovator faces such resistance from legacy stakeholders. Henderson tackled the issues one at a time, assembling the resources needed to launch the system at pilot sites. Along with her boss, Dr. Robert Galli, who headed up emergency care at UMMC, and the team's technology wizard, Greg Hall, Henderson worked with experts in the field to identify and secure equipment that was reliable, affordable, and easy to use. Next, Henderson persuaded administrators to allocate some space adjacent to UMMC's emergency department to serve as the telemedicine console room. She and her colleagues carried bulky TV consoles and equipment to rural hospitals and gave a "theatrical performance," as she put it, demonstrating the system. Leveraging the hospital's state discount from local telecom providers, she was able to get affordable T1 lines—the most reliable but most expensive type of telecommunications connection. To demonstrate that the system would provide adequate resolution over long distances, her team connected it via satellite phone to a remote clinic in Kigali, Rwanda. Success.

From the beginning, Henderson understood that UMMC's telehealth network would require a culture change, because it would shift tasks away from one set of actors and empower others. To overcome skepticism and develop needed skills, Henderson created a comprehensive telehealth curriculum taught by UMMC medical specialists for nurse practitioners at rural hospitals. The training program, which included written exams and certifications of completion, won over some doubters and built trust between the hub specialists and the spoke practitioners.

KRISTI HENDERSON,
FORMER CHIEF OF TELEHEALTH AND INNOVATION OFFICER, UMMC

Henderson was quickly able to demonstrate that patients were benefiting. Because telehealth allowed them to seek care closer to home, they could remain near loved ones during treatment, lose less work time, and save money on travel expenses.

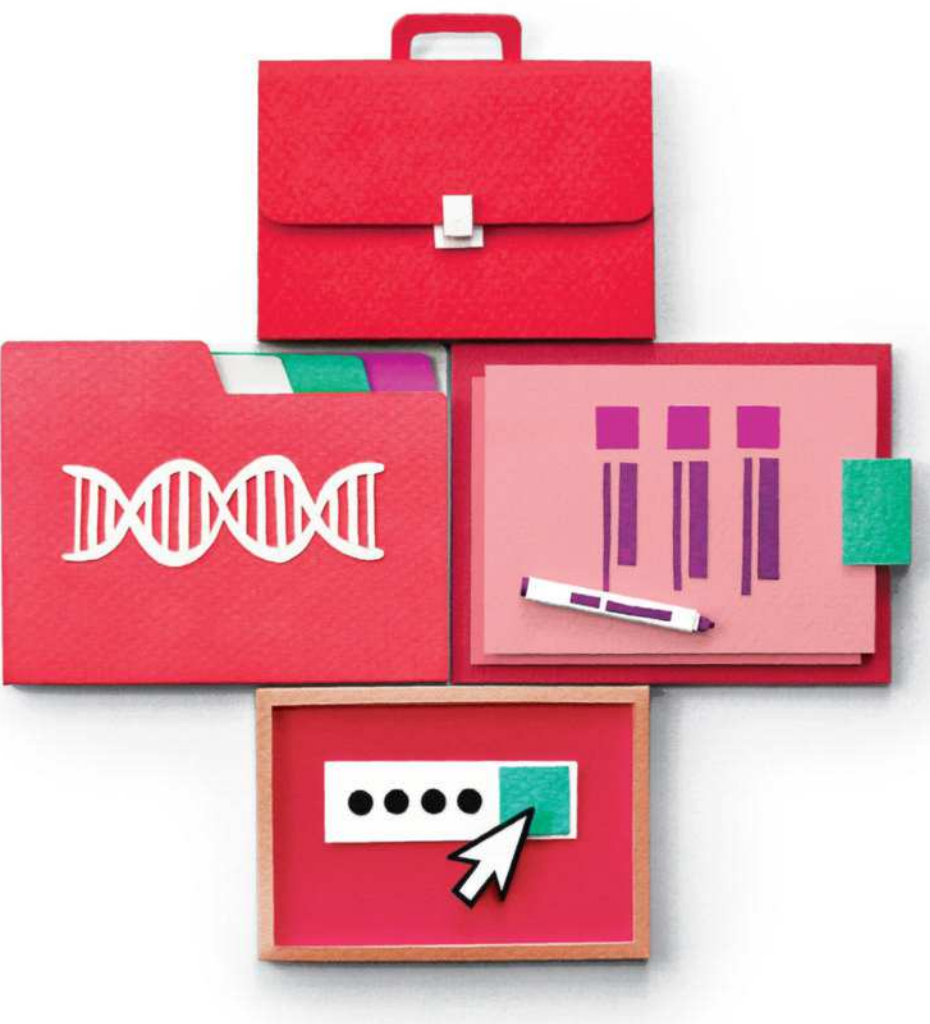
It took Henderson from 1999 to 2002 to overcome each barrier and get the green light to hook up the first client: a consortium of three critical access hospitals that were struggling to stay afloat. "The group was either so incredibly visionary or so incredibly desperate that they wanted to participate," says Henderson. Regulators kept the network on a tight leash, with periodic audits and surveys, while the Mississippi medical establishment continued to worry about the loss of hands-on contact between patient and doctor. But Henderson was quickly able to demonstrate that patients were benefiting. Because the long-distance technology allowed them to avoid visits to specialists in Jackson, patients were able to remain close to loved ones during treatment, lose less work time, and save money on travel expenses, thereby lowering the impact of accident or illness on their families. In addition, they began to trust their local hospitals more and seek treatment sooner.

Securing funds. Like most bottom-up innovations, the UMMC telehealth network had to scramble for money. For eight years, the program had no dedicated staff and no hospital budget. There was no private equity investment, and the National Institutes of Health or the National Science Foundation provided no grants. Instead, Henderson raised $4.8 million from a local private foundation and several relatively obscure federal programs for rural outreach.

Having secured just enough money to support the network infrastructure, Henderson turned to a bigger problem: how to fund the telehealth services themselves. State law prohibited Mississippi insurers from reimbursing charges for telehealth consults. So Henderson devised a hybrid payment system in which insurers reimbursed the rural hospitals for services provided locally, such as practitioners' time and lab tests, and the local hospitals paid UMMC a monthly "availability fee," based on an estimated number of hours of remote consultation, to cover the services of the physicians in Jackson. In this way, new revenue was generated in both the hub and the spoke hospitals, pressure was taken off UMMC's overextended resources, and patients got better access to care.

As the TelEmergency network grew, increasing numbers of emergency patients were treated at and discharged from local hospitals rather than transported to Jackson. Many other patients who previously might have gone directly to UMMC without seeking treatment closer to home began to choose the less-expensive local hospitals.

As UMMC added other specialties to the telehealth network—first psychiatry, radiology, pathology, and cardiology; then ophthalmology, obstetrics, neonatology, dermatology, and pulmonary care—Henderson combed state license records and mapped out where local specialists in those fields were already established. Where there were gaps,



she moved in; where there was coverage, she left things alone to avoid encroaching on the practices of local physicians. In 2011, UMMC officially launched its Center for Telehealth, an initiative that combined the original TelEmergency program with all the new telemedicine services.

Scaling up. To scale up the telehealth initiative, Henderson needed a better payment system based on direct insurance reimbursement. For that, too, Henderson had a strategy—one that took her to the state capital. "Every legislator had an area they were focusing their attention on—maybe it was prisons or schools or small business development," Henderson told us. "So before I met with them, I would do some research. Then I told them exactly how telemedicine could impact prisons, or the educational system, or whatever it was. I couldn't find any area where telehealth did not promise some benefit."

Henderson was working bottom-up to effect top-down policy change, leveraging her winning track record at the local level to change the game statewide. It took two years. In 2012, the state passed legislation requiring public and private insurers to cover telehealth services at the same rate as in-person services.

Once insurance payments, technology, and capabilities were in place, the network expanded, reaching out to nurses at elementary schools, high school athletic coaches, college mental health professionals, and prison HIV clinics.

Measuring results. Everywhere the network was implemented, it improved care. Let's take a look at one exemplary site, Ruleville, a town with a population of about 3,000 and a diabetes rate of 13.2%—one of the highest in the country. In 2014, Ruleville was chosen for a pilot program linking diabetes patients directly to specialists at UMMC. Each day, participants entered their glucose levels, blood pressure, and weight on tablet computers provided to them free of charge, and the specialists tracked progress remotely. If the numbers were concerning, a diabetes educator or nurse would reach out to keep patients on track.

The results surprised even the specialists. All participants in the program lost weight, and all reported feeling better. The program lowered A1C levels (a measure of blood glucose control) by almost 2%, on average, in just six months, far surpassing the goal of 1% in 75% of patients over a year. It also uncovered nine cases of diabetic retinopathy that might otherwise have gone untreated. The compliance rate for medication was an astonishing 96%. Financial results were equally impressive. "We saved money because we kept them out of our emergency rooms," says Henderson. "These people were coming into the ER four to six times a year and using our resources, but they were not able to pay." The downstream savings in emergency room costs in the first six months were estimated at $3,300 per patient. An independent study projected that if just 20% of Mississippi's uncontrolled diabetics on Medicaid enrolled in such a program, the state would save $189 million a year.

In 2015, Henderson was invited to testify before two U.S. Senate committees on how the Mississippi model could be replicated across the country. In 2017, the U.S. Health Resources and Services Administration named UMMC as one of only two national Telehealth Centers of Excellence in the country. "What we did in Mississippi can absolutely be replicated," says Henderson, now the vice president of patient access and care delivery transformation at Ascension, a faith-based health care organization. "But it is important to understand that it's not just about the technology. It's about people and process. It takes nurturing. It takes relationships and partnerships."

Lessons for incumbent innovators. For incumbents like UMMC, the road to health care reform is paved by intrapreneurs who have a unique understanding of their organizations' challenges. We have studied eight such incumbents from around the

world, observing how their internal change agents tackled problems ranging from shortages of specialists to overcrowded ERs to inefficient systems. In all cases, determined and pragmatic champions identified a clear problem to be solved, devised a defensible solution, and set about implementing it systematically and strategically within the local system. The champions avoided costly new investment at the beginning by finding ways to direct existing technology and capacity to the new initiative. And at each step they collected performance data that would prove critical for securing further buy-in and scaling. Above all, these determined advocates were adept at identifying and winning over key stakeholders—and disarming skeptics—within and outside the organization, be they colleagues whose space was needed early on or regulators whose support was essential later.

Consider how those principles applied in a quite different kind of case, the turnaround at Ascension. In 2000, Ascension was a collection of fragmented, aging, and financially weak hospitals. It was innovate or fail,

AT IORA, CHANGE WAS DRIVEN BY THREE INNOVATIONS THAT WORKED TOGETHER IN A VIRTUOUS CYCLE: A CAPITATION-BASED BUSINESS MODEL, HEALTH COACHES FOR EVERY PATIENT, AND A CUSTOMIZED IT PLATFORM.

and so CEO Anthony Tersigni and executive vice president John Doyle set out to transform Ascension into a modern, efficient, well-integrated network. But they didn't want simply to save Ascension; they wanted to restore its focus on its founding mission: caring for the poor and vulnerable. That would require dramatic efficiency improvements to free up money and resources to support the transformation.

First, they merged the independent hospitals that were under their umbrella, a requirement if they were to implement the bottom-up changes that would be needed. Then they engaged physicians to tackle specific operating problems. For example, they initiated an array of quality-improvement experiments, each led by a physician or nurse at one hospital—an "alpha" site—to reduce preventable injuries and deaths. The best practices from successful local initiatives were then rolled out across the entire network. The success of these physician- and nurse-led programs encouraged buy-in for broader operational elements of the transformation, such as centralizing purchasing and standardizing supplies. The systemwide integration saved Ascension $1 billion a year, or 5% of its total revenues, in supply-chain costs alone, allowing the network to start waiving copayments for poor, underinsured patients.

INNOVATION BY START-UPS: IORA HEALTH

Rushika Fernandopulle was always an inquisitive student. Much of what he learned at Harvard Medical School occurred not in the classroom but during field trips to countries such as the Dominican Republic, Haiti, India, and Malaysia. By the time he graduated, in 1994, Fernandopulle was convinced that some of the foundational practices of U.S. health care were major obstacles to patients' health.

Three things bothered him in particular. First, Fernandopulle saw the widespread fee-for-service payment system as a near-perfect incentive for performing unneeded tests and procedures, a major contributor to the high cost of health care and waste in the system (studies estimate that 25% to 40% of care in the U.S. is unnecessary). Second, he believed that the system had its priorities backward: Primary care, which protects against the need for expensive secondary and tertiary care, accounted for only 4% to 5% of total U.S. health care spending. Third, the IT platforms in health care were designed to facilitate patient billing rather than support patient care delivery.

To address those problems, Fernandopulle founded a potentially disruptive nonprofit organization called Renaissance Health. Launched in 2005 with $250,000 in angel funding, Renaissance focused on improving primary care using community-based "health coaches" to educate patients and monitor their care in outpatient settings. Initially Fernandopulle partnered with a hospital in Atlantic City, New Jersey and a patient group made up of employees at a self-insured casino. The organization employed a hybrid payment system consisting of a flat monthly "care coordination fee" and fees for certain services.

One year in, data showed that Renaissance's high-needs patients had 40% fewer emergency room visits and 25% fewer medical procedures than the control group. But there was also some bad news: Key people in the partner hospital were uncomfortable with the role of the health coaches. Some were concerned that these professionals had no formal medical training,

and others worried about the potential loss of income for the hospital's own ER and physician specialists. Fernandopulle felt that as a nonprofit partner to hospitals, Renaissance was able to tackle problems only with halfway measures. For example, he'd hoped to create an IT platform to support the program, but the price tag was too high; he made do with a modified version of the partner hospital's IT system. From this experience, Fernandopulle learned a lesson that applies to most, if not all, successful bottom-up start-ups, our research suggests: It's best to start with a clean slate.

Fernandopulle realized that in order to build the right business model and scale it, he needed private capital. In 2010 he cofounded Iora Health, a for-profit company, and raised more than $6 million from three venture capital firms. The new company opened four offices, each with a self-insured employer or union benefits manager as its chief insurance partner. From the start, he wanted to be sure his model could be scaled geographically, so he selected sites from different parts of the country with different patient mixes. One was in Hanover, New Hampshire (in partnership with Dartmouth College), another in Las Vegas (with the Culinary Health Fund), the third in Brooklyn (with Freelancers Union), and the fourth in Dorchester, Massachusetts (with the New England Carpenters Benefit Funds).

This time, Fernandopulle didn't mess around with partial solutions. He instituted a fully capitated payment system focused on primary care that required no fees, no coinsurance, and no copays. Instead Iora charged insurers a flat monthly fee per member that was twice their historical spending on primary care. He hired four health coaches for every doctor—paying them a fifth of a doctor's salary and half of a nurse's. He spent an outsize chunk of his start-up money on a custom IT system—and had no reservations about the cost.

Patient focus. Iora's goal was not to deliver health care but to empower patients to take control of their own health. "What we are really trying to do is change behavior," Fernandopulle told us. At Iora, that change was driven by three innovations that worked together in a virtuous cycle: a capitation-based business model, a health coach for every patient, and a customized IT platform. Capitated payments eliminated any concern about whether a particular patient interaction was billable, so consultations that once required a visit to a doctor's office could now take place via convenient technologies such as phone, e-mail, and Skype, and they didn't necessarily involve a doctor. That cleared the way for more involvement from health coaches, whose frequent patient interactions were facilitated by the IT platform. The platform, which tracked all patient data and made it available to doctors, health coaches, and patients, was designed not to facilitate fee-for-service billing but to enable better health outcomes.

RUSHIKA FERNANDOPULLE,
CEO OF IORA HEALTH

Seven years after launch, Fernandopulle's premise had proved itself. Iora Health had reduced hospitalizations for its members by 40% and cut total health care spending by 15% to 20%.

Iora wasn't the only provider to use health coaches in its practice. Omada Health and others used them, too, but they recruited coaches with prior health care experience, whereas Iora recruited people with qualities such as empathy, compassion, and gregariousness and then trained them in the medical skills they would need.

Iora's health coaches proactively managed each patient's well-being and intervened the moment trouble arose, especially with chronic-care patients whose costliest problem was noncompliance. Health coaches did some work that doctors and nurses did—such as taking vital signs and drawing blood—but they also engaged patients in new ways. They ran smoking cessation clinics, and they took diabetic patients to the grocery store and helped them shop for food. They led Zumba classes and served as confidants and cheerleaders. They trained patients to manage some of their care, such as monitoring blood pressure and insulin levels. This kind of task shifting, from doctors to health coaches and from health coaches to patients, saved money. More important, the coaches were better at many aspects of care than doctors—and they loved their work. But it was the capitated payment system that was the real game changer. Under the legacy fee-for-service systems, providers need a high volume of patient visits and procedures in order to make money. Under its capitation system, Iora makes money only if its patients stay healthy and thus require fewer tests and procedures. It was a completely different business model, one focused on value, relationships, outcomes, and the long game. Hybrid payment systems like Renaissance, Fernandopulle realized, created internal conflict. It had to be all or nothing. Iora's capitated model would save on administrative costs by reducing paperwork and would encourage other cost-saving measures to make the most of the flat-fee dollars. Iora clinics, for example, performed many of their own lab tests and processed their own blood work, which was cheaper and faster than sending the tests out. But the big savings would come from the investment in intensive and creative primary care that would reduce downstream expense on specialist and hospital care as patients stayed healthier. For patients with chronic conditions, Fernandopulle expected to see returns in the first year; the payoff for healthier patients would take longer. But he believed that every dollar he saved his partners in fees for ultrasounds, kidney dialysis, bypass surgeries, and other downstream costs generated additional buy-in for his capitated model.

Cost control. When necessary, Iora provided patients with specialist care, but there, too, Iora saved money by contracting specialists as consultants to the primary care practice—essentially inviting cardiologists, nephrologists, and others to join the gig economy. When Fernandopulle asked the head of endocrinology at a top hospital what percentage of endocrine clinic

patients could be managed by a primary care physician with a little expert advice by phone or e-mail, the answer was an astonishing 80%. A formal study of e-consultations by PCPs across 10 specialty areas, including neurology, rheumatology, dermatology, and nephrology, confirmed that on average, primary care physicians were able to address problems in those areas for 60% of patients. By 2017, seven years after he launched Iora Health, Fernandopulle's premise had proved itself. It had reduced hospitalizations for its members by 40% and cut total health care spending by 15% to 20%—far beyond the 4% to 5% needed to recoup Iora's higher spending on primary care. Its patient retention rate was 98%, and its Net Promoter Score among patients was in the 90s. Some 90% of patients had their blood pressure under control, compared with an average of 60% across providers in the industry. Employee attrition, at a mere 2.5%, was off the charts. Iora was increasing the number of patients it served by well over 50% a year, largely by attracting seniors through contracts with Medicare Advantage plans. Iora now has 24 locations in eight cities and employs more than 400 people. It has raised $125 million in venture capital, including from long-term investors such as Rice University's endowment fund and Singapore's Temasek.

Lessons for start-up innovators. Iora's success, and that of half a dozen other start-ups we studied, suggests some general principles by which innovators can attack U.S. health care's bloated costs, uneven quality, and access limitations. Fernandopulle and the other visionary founders took a clean-slate approach, building new business models from scratch. They launched ambitious, for-profit ventures right out of the gate. They thought from day one about how to scale their models by tapping into venture capital and private equity funding. They did not hesitate to make big strategic investments, including in technology, as Iora did with its customized IT system. Finally, they thought carefully about what kind of payment system would best fit their purpose, considering risk-sharing alternatives such as capitation and bundled payments.

In our research, we've seen several Iora-like start-ups. CareMore, for example, uses health coaches called extensivists to deliver capitated primary care, with a focus on geriatric patients. Other disruptive start-ups we studied look quite different. Consider Health City Cayman Islands, a for-profit hospital launched in 2014 by Dr. Devi Shetty, the founder of Narayana Health in India. Seeking to replicate innovative practices honed in India and to target American patients, Health City opened in a location near the United States but outside its regulatory sphere. This approach involved making innovative, even radical, decisions about where to locate, whether to build or buy (management opted to build from scratch), whom to partner with (it chose Ascension), how to price (bundles), and how to crack the U.S. market. Health City launched as a modest 104-bed facility for cardiology and orthopedic care, but the plan is to develop a large for-profit system, investing $2 billion over the next 10 to 15 years. Health City's transparent, bundled prices—which are 60% to 75% lower than those in the United States—serve its disruptive strategy of luring American patients from legacy hospitals.

FINDING FOOTHOLDS FOR INNOVATION

Kristi Henderson and Rushika Fernandopulle approached health care innovation in different ways, but they both viewed problems as opportunities to fundamentally transform part of the health care system. Each found a loose brick in the wall that allowed their innovations to gain a foothold. The UMMC team, for instance, discovered three financially strapped rural hospitals that were ripe for telehealth solutions, and Iora found that self-insured employers desperate to reduce costs were ideal customers for its primary care experiment.

Henderson, Fernandopulle, and the other innovators we studied show that solutions to health care problems can come from the bottom and be ingenious enough to overcome resistance from skeptics. We anticipate the arrival of many more providers using these models—and inventing new ones. We expect their market share to grow as they demonstrate their ability to improve care, lower costs, and expand access, and as investors appreciate their potential worth.

As Fernandopulle points out, if his company and others like it can capture even 20% of the $350 billion in wasted health care spending per year, it would amount to a staggering sum. By our calculation, if companies with Iora's primary care–focused approach enrolled one-third of America's projected 55 million seniors in 2020 into Medicare Advantage plans, the country could save $30 billion to $40 billion a year in avoided spending on secondary and tertiary care. And if those companies reaped 20% of the value thus created, their market capitalization could be upwards of $100 billion, even with a price-earnings multiple of just 15.

Numbers like that are a powerful incentive for change. They will no doubt motivate many health care innovators to expand access to quality care, enabling patients to enjoy good health. If you're looking for a starting point, start there.

HBR Reprint R1804G

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BY SINAN ARAL

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BUSINESS MODELS FOR ADDITIVE MANUFACTURING

BY RICHARD A. D'AVENI

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IN BRIEF

THE ADVANCES
Additive manufacturing technology has progressed, and its supplier ecosystem and the materials available have expanded. That means 3-D printing machines can now produce a much wider range of products—affordably and often in greater volume.

THE OPPORTUNITIES
The technology is finally ready to go mainstream: It is competitive with conventional manufacturing; can produce complex, high-performance structures; and can easily switch from making one item to making another.

THE IMPLICATIONS
Companies should consider new business models and strategies to exploit the opportunities and defend themselves against rivals that use 3-D printing.

A new era in additive manufacturing, or "3-D printing," is at hand, with major implications for adoption of the technology and for business models that companies can use in taking the plunge. In the three years since I last wrote about the field for HBR ("The 3-D Printing Revolution," May 2015), additive's growing capabilities, together with expansion in both the materials available and the supplier ecosystem, have made it possible to affordably produce a much broader range of things—from the soles of running shoes to turbine blades—often in much higher volumes. The technology provides an unprecedented ability to customize products and respond quickly to shifts in market demand. As a result, it is moving from limited applications, such as prototyping and making conventional machine tools, to a central role in manufacturing for a growing number of industries.

Strategically, that means additive is becoming a full-fledged competitive weapon: It can be used to hold on to market leadership, to dethrone a dominant player, or to diversify by exploiting a printer's capability to make products for different industries. Consequently, leaders need to understand additive's range and potential and the possibilities that will open up in the near future. This article offers a playbook.

RECENT ADVANCES

Let's start by examining the breakthroughs propelling additive manufacturing's spread. Technological advances have led to dramatic gains in efficiency and expanded applications in a wide range of areas. The new machines put out products much faster and at lower cost, and the items that emerge from them require less finish work than they did with earlier 3-D printers. Some of these advances are:

Faster, more precise printer heads. Used mainly for plastic products, they can deposit material at 12 to 25 times the speed that was possible three years ago, making them competitive with injection-molding processes for many if not most of those products.

Faster powder deposition. New powder-jetting systems that use binding agents and adhesives can build up complex parts for metal and plastic goods 80 to 100 times as fast as laser-based printers can. These parts cost on average only $4 versus $40 and are made in minutes, not hours.

Continuous liquid interface production (CLIP). Plastic objects are pulled continuously from a vat of resin instead of being built up layer by layer. While not quite as fast or as inexpensive as layer-based additive, CLIP is still economical for mass production, and it offers advantages in finishing, the making of complex parts, and the materials it can use.

Electronics-embedding technologies. New machines can print electronic circuitry and components such as antennae and sensors directly onto the walls of objects. This lessens the need for assembly, frees up space within products, and improves the electronic integration of the entire product, reducing manufacturing waste and enhancing quality. The increasing precision of the machines means that they can be used, for instance, to produce OLED (organic light-emitting diode) display screens.

The benefits of these advances are amplified by breakthroughs in materials.

Manufacturers can choose from a much wider range of them, including high-tech alloys for jet-engine parts and other products with demanding performance requirements. Composites, such as very strong plastics infused with glass fiber, carbon fiber, and carbon nanotubes, can replace metals in many cases. Most of these materials are available from multiple sellers, so manufacturers aren't forced to buy proprietary materials from the printer makers at higher prices.

Vast expansion in the additive ecosystem makes it much easier for companies to adopt the new technologies. The ecosystem now includes an array of contract printers, consultants, and suppliers of software and quality-control scanning systems along with makers of printers and materials. Participants range from start-ups to giants such as Siemens, Dassault Systèmes, and DowDuPont. The field has entered a virtuous cycle: A larger ecosystem leads to more applications and lower costs, inducing more manufacturers to adopt the technology, which attracts even more players to the ecosystem.

Additive is fulfilling its promise. It is now competitive with conventional manufacturing in its ability to make tens and even hundreds of thousands of units a year. Factories can use optimizing software to adjust production (changing the number of units or switching between items made) or upgrade products on the fly, at low cost, rather than having to shut down while expanding, retooling, or altering the expensive assembly lines used in conventional plants. Additive also allows companies to make intricate products that can't be made with the subtractive (CNC cutting and drilling) or formative (injection molding) techniques at the heart of conventional manufacturing. And finally, additive is much less capital-intensive than conventional mass-manufacturing equipment: A printer costing less than $1 million can replace a $20 million machine, making it feasible to have many smaller production sites and locate them close to customers.

All this explains why a growing number of diversified, well-established companies—from BMW to Boeing to the Japanese conglomerate Sumitomo—are buying up 3-D printers in quantity, or even printer manufacturers. General Electric, which aims not only to use 3-D printers but to sell them to others, has moved very aggressively into the field: It has acquired three printer makers and has developed software to talk to the machines.

As with any emerging technology, current applications will evolve as learning occurs and may morph into something quite different. Some failures and modifications are inevitable, but the breadth of investment and the multitude of business models now being commercialized demonstrate that players in almost all manufacturing industries should be considering additive.

EMERGING BUSINESS MODELS

In light of these developments, where should a mass manufacturer start? The most important decision is the business model. So far six have emerged. The first three exploit additive's superiority in product variation relative to traditional manufacturing; the fourth and fifth maximize its benefits in making complex products; and the sixth takes advantage of efficiencies the technology offers. These models can be used by both B2B and B2C businesses. Some of them are further along in practice than others, but together they show the range of possibilities additive currently provides.

1 MASS CUSTOMIZATION

This model takes product variation to the extreme. It entails creating one-off products that are precisely adjusted to the needs or whims of individual buyers—adjustments that can be carried out by simply uploading each customer's digital file into a 3-D printer. Thanks to the efficiency and precision of digital technology, these products cost less than conventionally manufactured items but fit individuals' specifications more exactly.

Mass customization is suitable for any large market in which customers are dissatisfied with standardized, conventionally produced offerings and it's easy to collect customer information. Among the many examples are hearing aids, orthodontic braces, prostheses, sunglasses, car and motorcycle accessories, and Christmas tree decorations. In the case of hearing aids, a laser scan of a patient's ear is automatically converted into a production file, and a printer forms the shell. The electronics are still added separately, but that could soon change, given that it's now possible to print them directly into the shell.

This model can rapidly and significantly affect an entire industry. With hearing aids the shift happened in a year and a half, forcing some manufacturers into bankruptcy.

The main competitive challenge is to reduce the cost of acquiring individual customers' information. Hearing-aid companies first needed a scanning device that audiologists could easily use. In this case, customers were willing to go to an audiologist to be measured. In contrast, buyers of custom orthotics and insoles didn't want to visit an expensive podiatrist to be measured. That's why SOLS Systems, which innovated in this area, couldn't make it on its own; it was acquired in 2017 by another footwear company, Aetrex Worldwide. But the development of smartphone apps that allow people to measure their own feet is overcoming the information-collection obstacle. And HP Inc. has devised a 3-D scanning solution, FitStation, that can be placed in stores. The market is poised to take off.

2 MASS VARIETY

This model targets customers who have strong and varying preferences but don't need products adjusted to their personal specifications. Manufacturers can skip the process of collecting personal information and offer a wide variety of options at affordable prices. As with mass customization, units are one-offs.

Some jewelry manufacturers, for example, take a few basic designs and make hundreds or even thousands of variations, which they can show online or display in stores. The display versions are hollow and made with faux gold or silver. Instead of maintaining a large and costly inventory of pieces that might not sell, retailers can wait for actual demand. With orders in hand, they can have a contract additive manufacturer

such as Shapeways produce the items with solid precious metals, order a desired piece from the designer, or acquire a 3-D printer to make the products in-house.

With mass variety, the main competitive challenge is managing choice. Offering a broad selection will expand the market, but presenting buyers with a huge number of possibilities may overwhelm them. And even with additive, each choice adds some design costs. Manufacturers will have to watch the market carefully or use machine learning to continually sense and respond to what consumers want. They must be ready to develop new designs immediately and purge old ones that aren't selling—an approach that's much easier with additive than with conventional manufacturing.

3 MASS SEGMENTATION

This model greatly limits variety, offering only a few dozen versions of a product to customers whose needs are less variable and easier to predict than with the previous two models. It works well for highly segmented markets, such as components designed specifically for popular B2B products. Each version serves a single segment and differs from the others enough that conventional manufacturers would need costly new machine tools to make all of them. Thus additive companies can make them at a lower cost.

All versions of a product can collectively total hundreds of thousands of units or more. So production is in batches rather than one-off. (Even with additive, uploading files, changing materials, and so on entail small switchover costs.) But because it's still easy to switch printers to other products, a company limits batches to the number it is confident it can sell.

This model is also suitable for seasonal, cyclical, or short-term fad markets, which are tough for traditional manufacturers to serve because they must bet on what consumers will want several months in the future to set up an efficient production line. Additive manufacturers, with their much lower setup time and costs, can commit to production closer to when demand actually

ADVANCES THAT ARE TAKING 3-D PRINTING MAINSTREAM

Here are just some of the technology improvements that are making additive manufacturing competitive with or even superior to conventional factories in a wide range of applications.

TECHNOLOGY	DESCRIPTION	ADVANTAGES	PRODUCTS
MULTIJET FUSION Commercially available **Leading Players** HP Inc., voxeljet, Xaar	Thousands of print heads precisely and quickly lay fusing and detailing agents on plastic powder to build up an object.	12 times as fast and half as expensive as previous plastic additive processes and competitive with injection-molding production for manufacturing up to 110,000 units of an average plastic part	Custom shoe insoles; customized dolls for LookReal; exoskeletons for military and defense drones
CONTINUOUS LIGHT INTERFACE PRODUCTION (CLIP) Commercially available **Leading Player** Carbon	Objects are pulled from a vat of resin that solidifies when exposed to light; oxygen is used to speed up the process.	25 times as fast as (but not significantly cheaper than) conventional stereolithography, especially for making complex nonlinear shapes	Nozzles for Vita-Mix's commercial mixers; mounts for Oracle servers
AEROSOL JETTING AND NANO-PARTICLE INK JETTING Commercially available **Leading Players** Optomec, Nano Dimension	Conductive metal inks, dielectric pastes, and semiconductor material are precisely deposited to print electronic components and chips.	Allows electronic circuits and components to be embedded in the product, saving space and assembly costs	Embedded antennae for mobile phones (LITE-ON); high-efficiency solar cells
INKJET SCREEN PRINTING Commercially available **Leading Players** Kateeva, JOLED, Tokyo Electron	Specialized nozzles spray soluble inks in a nitrogen chamber to print flexible and large OLED screens.	20% to 40% lower production costs, fewer defects, and higher quality (screens last two or three times as long) compared with conventional manufacturing; almost zero waste	Flexible OLEDs for wearables and mobile displays; LG and Samsung large OLED TV screens
AUTOMATED PARALLEL PRINTING Scheduled to become commercially available in mid-2018 **Leading Player** Formlabs	A series of printers combined with a robotic arm and a finishing function create ready-to-sell plastic products.	First fully automated, "lights-out" system using additive and automation to reduce labor in unloading and moving products to a separate finishing area	Surgical guides for the health care industry; dental molds and crown and bridge models
SINGLE-PASS JETTING Scheduled to become commercially available in early 2019 **Leading Player** Desktop Metal	The high-speed jetting of metal powder is combined with binding agents in a continuous bidirectional process.	100 times as fast as laser-based metal additive manufacturing and 1/20th as expensive	Water impellers (for pumps); drill bits; gears
CAROUSEL CONVEYOR PRINTING In development **Leading Player** BigRep (in partnership with TNO)	A moving platform rapidly rotates the product being printed among numerous printheads and finishing functions.	10 times as fast as stationary printing	Customized footwear; spare parts for automotive and transportation industries (in development)

occurs, offer more choices, and avoid the risk of being stuck with unwanted goods that must be heavily discounted to sell.

RaceWare Direct, a UK firm that makes accessories for serious cyclists, has adopted the mass segmentation model. It sells a variety of handlebar mounts and other durable, lightweight parts. Each version of its mount for GPS devices, for example, sells only a few hundred or a few thousand units. A conventional manufacturer might need to achieve economies of scale by making just one mount for all such devices.

Daimler has moved toward mass segmentation in stages. It initially used additive to make spare parts for older trucks. After it became proficient with the technology, it started producing specialized parts for some current low-volume truck models. As the number of segments served grows and the number of units sold per segment increases, this process will generate enough parts to become a profitable aspect of the business.

The main competitive challenge here lies in deciding on the size of each segment and the number of segments to serve. Smaller segments will better satisfy some customers but can add design and switchover costs—especially if they require different materials or performance specifications.

4 MASS MODULARIZATION

Rather than offering customers different versions of a product, this model involves selling a 3-D-printed body with interchangeable modules for insertion. It applies mainly to electronic devices, which can mean everything from cars to fighter jets and drones. So far this approach has been used only for military hardware and some niche automobiles, but it has significant potential—which Facebook, for one, has realized. It bought Nascent Objects, an additive start-up, to create modular versions of its virtual reality headsets and other hardware.

Here's another application: a smartphone that allows customers to buy a base unit and then snap in modules. The base unit's exoskeleton is printed in customized ergonomic shapes or with flashy designs, and users choose which modules to insert over time as their needs and preferences change or as technology advances, negating the need to buy an entirely new phone. Google gave up on such a phone a few years ago, but Moduware, an Australian company, has developed software to help smartphone manufacturers design the base units. Moduware could profit from making the modules used in products designed with its software.

Traditional manufacturers in a range of areas already offer modular products. But 3-D-printed products have two advantages. First, additive allows customization of the base unit. Second, and more important, that unit can be made in a completely new way, with antennae, wiring, and circuits printed directly onto or into its body. This reduces assembly costs, increases opportunities for miniaturization, and creates space for additional electronic components to be integrated into the product in ways that conventional modular production methods cannot manage.

The main competitive challenge here is deciding what to embed in the base unit and what to place in the modules, which affects pricing and product versatility. Putting more into the base unit makes it easier to give a rival's functionality away free, much as Microsoft did by incorporating the browser into its Windows operating system, undermining Netscape.

5 MASS COMPLEXITY

The first four models take advantage of additive's flexibility to make a variety of product versions at low cost. This model exploits its ability to make products with intricate designs that conventional manufacturing can't achieve and to produce unusual shapes and embed sensors and other elements. That ability reduces production costs while improving the product's reliability—as Vita-Mix found when it used the CLIP printer to make a nozzle for its commercial mixers. It's now making tens of thousands of those nozzles.

Boeing is using additive to build supports shaped like a honeycomb for airplane fuselages. The intricate structure of the supports makes these load-bearing parts just as strong as the conventional equivalents but with much less material—thereby significantly reducing weight and fuel consumption. Adidas uses CLIP printers to make strong, supple, lightweight lattice structures for the midsoles of running shoes, which are too complex to be made with conventional technology. It expects to print 100,000 pairs in 2018; 500,000 in 2019; and eventually millions a year. These midsoles will absorb the impact of running better than conventional ones do.

With new design software emerging, additive manufacturing can now restructure materials at the micro level to improve properties such as porosity, strength, durability, elasticity, and rigidity. It can even improve a product's resistance to water, chemicals, and bacteria.

The main challenge here is simply the human imagination. Can product developers escape the conventional mindset to design products that take full advantage of additive's potential? If so, mass complexity may expand far beyond high-performance products. And new software from Autodesk, Dassault, and others means that product developers may not even have to do the thinking. This software allows developers to specify certain attributes and then leave it to the computer to generate a design that will optimize performance and cost, overcoming trade-offs that have stymied human designers. Automobiles, for example, could be made both safer and lighter. Such "generative design" may become the killer app that persuades many companies to jump into additive, lest their rivals offer desirable new products that are simply unachievable with conventional techniques.

6 MASS STANDARDIZATION

This last model attacks traditional manufacturing's home turf. It proves—contrary to naysayers' dismissal of additive as a niche technology that is useful only for small-scale production—that high-volume standard products can be churned out at a low

cost in certain circumstances. The technology is still emerging in this area, but it could become a game changer.

Take video screens. Conventional manufacturing processes for OLED screens waste a lot of expensive light-emitting electrochemical materials. Printers now on the market handle these materials more precisely and thereby produce lower-cost, higher-performance screens. Additive-made OLED screens for cell phones and other handheld devices are everywhere; television manufacturers, interested in joining in, are conducting pilot projects for mass-producing TV screens with these printers.

Mass standardization is possible even for low-tech products. Cosyflex, a 3-D printing system made by Tamicare, produces textiles by spraying various mixtures of polymers and natural fibers onto a moving platform. This fully automated system can produce finished goods at lower cost than conventional production can, even at scale. Tamicare is still commercializing its technology, but the results it has seen to date are promising.

Over time, as 3-D printers grow ever more efficient, they may become competitive for making standardized products even when they don't save on direct costs. That's because traditional manufacturing often involves a lot of indirect and overhead costs: an extended and risky supply chain, expensive capital equipment, the elaborate assembly of parts, and high inventory or transportation costs. Additive reduces all those. What's more, the printers themselves are generally less expensive than conventional machines with tool-and-die elements.

The main competitive challenge here is likely to be how much to specialize 3-D printers for these products. Specialization can help achieve the efficiencies needed for mass standardization, but it may increase risk by restricting companies to certain industries.

STRATEGIC MOVES

These six business models are not mutually exclusive—a company might find value in both greater variation and greater complexity. GE's fuel nozzles for jet engines combine mass complexity with mass segmentation. The nozzles are complex combinations of many parts, and each kind of jet engine needs a different shape of nozzle. So GE uses additive to make dozens of versions in medium quantities. Adidas's additive midsoles follow the mass complexity model, but a separate line will use mass customization to satisfy high-level runners or those with special orthopedic challenges. To better understand the preferences of its customers, Adidas is considering moving its manufacturing closer to them and perhaps even locating some of it within retail stores.

Once you've gained capabilities in additive, you can apply it in a variety of competitive situations. Here are some ways it can be used against rivals that rely on conventional production:

Blocking out potential competitors. Suppose your company has a strong market position but is vulnerable to rivals' targeting of specific segments. You could use additive to proactively expand your product line and prevent any openings. Hershey seems to be following this strategy with its recent investment in additive. Although it is the dominant player in the U.S. chocolate industry, it has been losing market share to premium foreign companies that might creep into the mass market. Creating its own conventional product line for fancy Italian or Belgian chocolate would be too costly, because the company couldn't sell enough to cover its expensive equipment. But with additive it can economically make chocolate in a range of recipes by using many small printers, each dedicated to a specific country's style—and thereby prevent the foreign rivals from expanding their toehold. Hershey is also hoping that its new chocolate printers become so easy to use that it can sell them to restaurants, bakeries, and pastry shops—thereby blocking rivals that might try to enter the American market through those channels.

Dethroning the market leader. Suppose your company is struggling to compete with the dominant player in your industry, which offers only a few standard products. Because it has the largest market share, the leader's economies of scale enable it to invest more aggressively than your company can. The only way to compete is to change the game. With additive, your company can cheaply produce variations on the standard product and determine whether customers are interested in them. If you attract enough interest, you can adopt one of the variation-based business models. Even if your offerings aren't cheaper than the leader's, you will gain market share, because customers will be happy to benefit from an offering closer to their tastes or needs. As you add more variety to your offerings, you might draw so many customers away from the market leader that it will have to scale down, and its margins will collapse. Even if the leader sees the danger, it will struggle to respond, because the importance of achieving scale economies by making standard products is entrenched in its mindset.

Coexisting with the market leader. What if you find that customer demand for variety isn't sufficient for your company to seize enough market share to dethrone the leader anytime soon? You might still decide to go with additive and focus on just a few segments—again with a variation-based business model. You might be able to restrict your rival to its current markets by preempting its growth opportunities. If not, your company could still profitably coexist with it by using your product variety and niches to avoid direct competition.

Overcoming rivals that have strong supply or distribution chains. A powerful value chain is hard to beat, but additive can change the game by creating an entirely

ADDITIVE CAN NOW RESTRUCTURE MATERIALS AT THE MICRO LEVEL TO IMPROVE POROSITY, STRENGTH, AND ELASTICITY.

THE TEMPTATION OF INDUSTRY 4.0

For several years the German government and some consulting firms have promoted "Industry 4.0," a broad program for digitizing manufacturing with robots, artificial intelligence, the internet of things, and other technological advances. Encouraging companies to digitize and innovate by adding new technologies is a good thing. But some versions of Industry 4.0 still assume conventional, capital-intensive manufacturing techniques and supply chains. That could be a bad thing, because it consigns additive manufacturing to a largely supporting role of prototyping and providing a few specialized parts. Such an incremental approach to digitization will end up protecting the past and preventing the rethinking necessary to take full advantage of additive's capabilities. Factories with heavy investments in conventional equipment will struggle to customize products, make complex parts, reduce assembly, and adjust production to changing market demand.

Consequently, companies that embrace Industry 4.0 are likely to lose out to nimbler rivals that take full advantage of additive's capabilities. Many Industry 4.0 devotees could end up with fixed costs and operational inflexibilities that sink them in the long term.

new supply chain for materials and parts. This is especially true with the mass-complexity business model, which allows your company to create new versions of products with fewer parts and different materials. If you have a supplier with additive capacity, you might consolidate the manufacture of many of your company's low-volume parts with it, because it can easily switch between small batches. A similar logic applies to distribution, because additive allows your company to build smaller factories close to customers. (Some companies even have mobile additive factories—printers in a truck that can quickly move to a customer in need.) Because additive makes your factories and your suppliers' more flexible, it generally works to reduce supply chain complexity.

This dynamic can insulate you against supply and distribution risks, which are rising because of increasing protectionism. If a specific part or material suddenly becomes much more expensive—owing to tariffs, natural disasters, or geopolitical tensions—you can redesign the product to use less of it. Or you can reallocate production to a safer site merely by transferring design files to a different additive facility.

This approach is most effective when your rival is forced to depend on long, geographically and technically complex supply or distribution chains.

Exploring and capturing new markets. One way to change the game is to move to adjacent or completely new markets. When ideas or opportunities appear in either place, you can use additive to develop a new product, test the market, modify the product to improve sales, and gain first-mover advantage quickly and less expensively. Additive makes it easier to take an exploratory approach, because it can yield product shapes and structures beyond those currently imagined. And you can invest the profits from a new market to compete better in your existing market. This approach is risky, but it can be a strong choice for ambitious, entrepreneurial companies.

THE COMING OF PAN-INDUSTRIAL MANUFACTURING

Coupled with a powerful software platform, additive manufacturing enables companies to diversify much more widely. For example, in 2015 GE built a remarkable factory in Pune, India. Previously every GE plant had been dedicated to serving a single division, such as aviation, health care, or power generation. But because Pune relies on 3-D printers, it can make parts for multiple divisions, which allows it to keep its capacity-utilization rate higher than if it were serving just one business. (It has some conventional manufacturing equipment as well, to make parts for which additive isn't yet economical.) If jet sales are booming, Pune devotes much of its production to parts for jet engines. But if that business slows, and demand for renewable power takes off, those production lines start making wind turbines. A conventional plant would find it too expensive and time-consuming to make the switch.

The Pune plant relies mostly on a mass-segmentation business model for its diverse products, but as it moves along the learning curve, it may start to employ mass complexity as well.

Thanks to this plant and to other "brilliant factories" that GE has established or intends to build, the company's diversified businesses will reap substantial benefits. To fully realize them, the divisions will need to collaborate. GE may not be a conventional conglomerate much longer. We need a new name to describe a diversified manufacturer that combines additive with software platforms to achieve operational synergies across the entire company. I suggest "pan-industrial." (See my article "Choosing Scope over Focus" in the *Sloan Management Review,* Summer 2017.)

Pan-industrials won't venture into just any industry: The technical expertise needed, the business model, or the materials available will limit their span. They might focus on consumer durables, metal parts, or plastic industrial goods. But that will still provide much wider scope than anything Wall Street currently tolerates. As companies learn to exploit the full potential of additive, diversification may even become a strategic imperative, ushering in a new era of competition among giant industrial companies.

MANY COMPANIES ARE intrigued by the potential of additive manufacturing but wary of the risks. At most they use it to make prototypes and a few low-volume niche products. Now is the time to take it seriously as an option for large-scale commercial production. Companies should move off the sidelines, get familiar with the new techniques, and explore how they might alter the competitive landscape.

Additive has the potential to shake up not just individual industries but the manufacturing sector as a whole. Eventually a technology that engineers once mocked for its slowness may become a dominant force in the economy.

HBR Reprint R1804H

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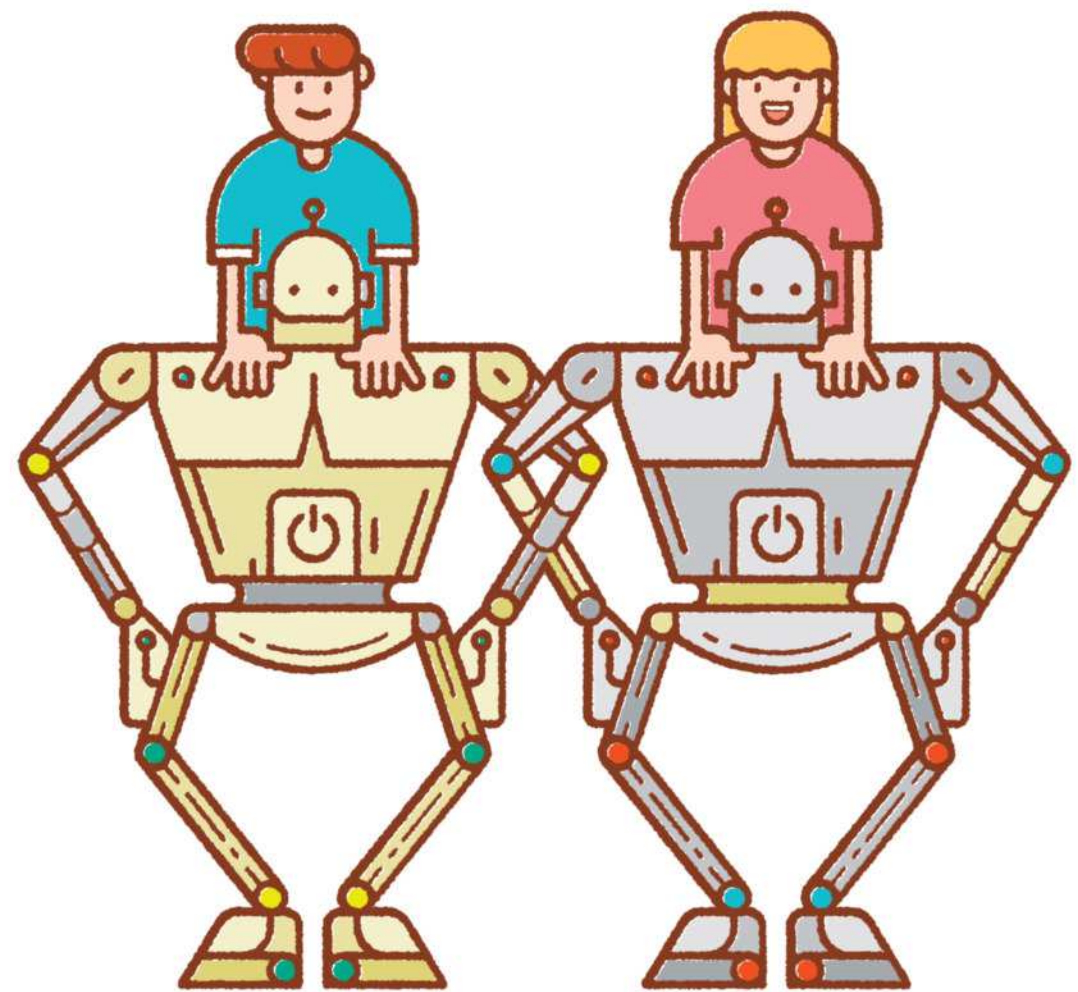
ILLUSTRATION BY KUO CHENG LIAO

COLLABORATIVE INTELLIGENCE:

Humans and AI Are Joining Forces

BY H. JAMES WILSON
AND PAUL R. DAUGHERTY



IN BRIEF

THE OUTLOOK
Artificial intelligence is transforming business—and having the most significant impact when it augments human workers instead of replacing them.

THE DETAILS
Companies see the biggest performance gains when humans and smart machines collaborate. People are needed to train machines, explain their outputs, and ensure their responsible use. AI, in turn, can enhance humans' cognitive skills and creativity, free workers from low-level tasks, and extend their physical capabilities.

THE PRESCRIPTION
Companies should reimagine their business processes, focusing on using AI to achieve more operational flexibility or speed, greater scale, better decision making, or increased personalization of products and services.

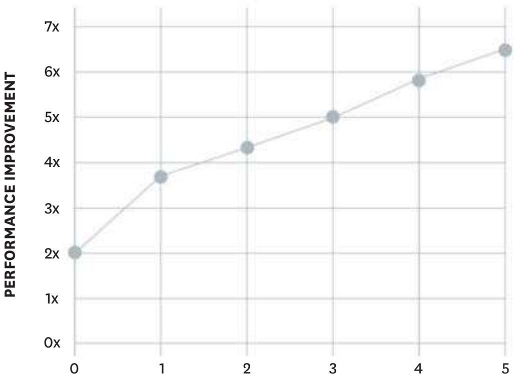
ARTIFICIAL INTELLIGENCE IS BECOMING GOOD AT MANY "HUMAN" JOBS—DIAGNOSING DISEASE, TRANSLATING LANGUAGES, PROVIDING CUSTOMER SERVICE—AND IT'S IMPROVING FAST. THIS IS RAISING REASONABLE FEARS THAT AI WILL ULTIMATELY REPLACE HUMAN WORKERS THROUGHOUT THE ECONOMY. BUT THAT'S NOT THE INEVITABLE, OR EVEN MOST LIKELY, OUTCOME. NEVER BEFORE HAVE DIGITAL TOOLS BEEN SO RESPONSIVE TO US, NOR WE TO OUR TOOLS. WHILE AI WILL RADICALLY ALTER HOW WORK GETS DONE AND WHO DOES IT, THE TECHNOLOGY'S LARGER IMPACT WILL BE IN COMPLEMENTING AND AUGMENTING HUMAN CAPABILITIES, NOT REPLACING THEM.

Certainly, many companies have used AI to automate processes, but those that deploy it mainly to displace employees will see only short-term productivity gains. In our research involving 1,500 companies, we found that firms achieve the most significant performance improvements when humans and machines work together (see the exhibit "The Value of Collaboration"). Through such collaborative intelligence, humans and AI actively enhance each other's complementary strengths: the leadership, teamwork, creativity, and social skills of the former, and the speed, scalability, and quantitative capabilities of the latter. What comes naturally to people (making a joke, for example) can be tricky for machines, and what's straightforward for machines (analyzing gigabytes of data) remains virtually impossible for humans. Business requires both kinds of capabilities.

To take full advantage of this collaboration, companies must understand how humans can most effectively augment machines, how machines can enhance what humans do best, and how to redesign business processes to support the partnership. Through our research and work in the field, we have developed guidelines to help companies achieve this and put the power of collaborative intelligence to work.

THE VALUE OF COLLABORATION

Companies benefit from optimizing collaboration between humans and artificial intelligence. Five principles can help them do so: Reimagine business processes; embrace experimentation/employee involvement; actively direct AI strategy; responsibly collect data; and redesign work to incorporate AI and cultivate related employee skills. A survey of 1,075 companies in 12 industries found that the more of these principles companies adopted, the better their AI initiatives performed in terms of speed, cost savings, revenues, or other operational measures.



NUMBER OF HUMAN-MACHINE COLLABORATION PRINCIPLES ADOPTED
(0 INDICATES THE ADOPTION OF ONLY BASIC, NONCOLLABORATIVE AI)

HUMANS ASSISTING MACHINES

Humans need to perform three crucial roles. They must *train* machines to perform certain tasks; *explain* the outcomes of those tasks, especially when the results are counterintuitive or controversial; and *sustain* the responsible use of machines (by, for example, preventing robots from harming humans).

Training. Machine-learning algorithms must be taught how to perform the work they're designed to do. In that effort, huge training data sets are amassed to teach machine-translation apps to handle idiomatic expressions, medical apps to detect disease, and recommendation engines to support financial decision making. In addition, AI systems must be trained how best to interact with humans. While organizations across sectors are now in the early stages of filling trainer roles, leading tech companies and research groups already have mature training staffs and expertise.

Consider Microsoft's AI assistant, Cortana. The bot required extensive training to develop just the right personality: confident, caring, and helpful but not bossy. Instilling those qualities took countless hours of attention by a team that included a poet, a novelist, and a playwright. Similarly, human trainers were needed to develop the personalities of Apple's Siri and Amazon's Alexa to ensure that they accurately reflected their companies' brands. Siri, for example, has just a touch of sassiness, as consumers might expect from Apple.

AI assistants are now being trained to display even more complex and subtle human traits, such as sympathy. The start-up Koko, an offshoot of the MIT Media Lab, has developed technology that can help AI assistants seem to commiserate. For instance, if a user is having a bad day, the Koko system doesn't reply with a canned response such as "I'm sorry to hear that." Instead it may ask for more information and then offer advice to help the person see his issues in a different light. If he were feeling stressed, for instance, Koko might recommend thinking of that tension as a positive emotion that could be channeled into action.

Explaining. As AIs increasingly reach conclusions through processes that are opaque (the so-called black-box problem), they require human experts in the field to explain their behavior to nonexpert users. These "explainers" are particularly important in evidence-based industries, such as law and medicine, where a practitioner needs to understand how an AI weighed inputs into, say, a sentencing or medical recommendation. Explainers are similarly important in helping insurers and law enforcement understand why an autonomous car took actions that led to an accident—or failed to avoid one. And explainers are becoming integral in regulated industries—indeed, in any consumer-facing industry where a machine's

output could be challenged as unfair, illegal, or just plain wrong. For instance, the European Union's new General Data Protection Regulation (GDPR) gives consumers the right to receive an explanation for any algorithm-based decision, such as the rate offer on a credit card or mortgage. This is one area where AI will contribute to *increased* employment: Experts estimate that companies will have to create about 75,000 new jobs to administer the GDPR requirements.

Sustaining. In addition to having people who can explain AI outcomes, companies need "sustainers"—employees who continually work to ensure that AI systems are functioning properly, safely, and responsibly.

For example, an array of experts sometimes referred to as safety engineers focus on anticipating and trying to prevent harm by AIs. The developers of industrial robots that work alongside people have paid careful attention to ensuring that they recognize humans nearby and don't endanger them. These experts may also review analysis from explainers when AIs do cause harm, as when a self-driving car is involved in a fatal accident.

Human-machine collaboration enables companies to interact with employees and customers in novel, more effective ways.

Other groups of sustainers make sure that AI systems uphold ethical norms. If an AI system for credit approval, for example, is found to be discriminating against people in certain groups (as has happened), these ethics managers are responsible for investigating and addressing the problem. Playing a similar role, data compliance officers try to ensure that the data that is feeding AI systems complies with the GDPR and other consumer-protection regulations. A related data-use role involves ensuring that AIs manage information responsibly. Like many tech companies, Apple uses AI to collect personal details about users as they engage with the company's devices and software. The aim is to improve the user experience, but unconstrained data gathering can compromise privacy, anger customers, and run afoul of the law. The company's "differential privacy team" works to make sure that while the AI seeks to learn as much as possible about a group of users in a statistical sense, it is protecting the privacy of individual users.

MACHINES ASSISTING HUMANS

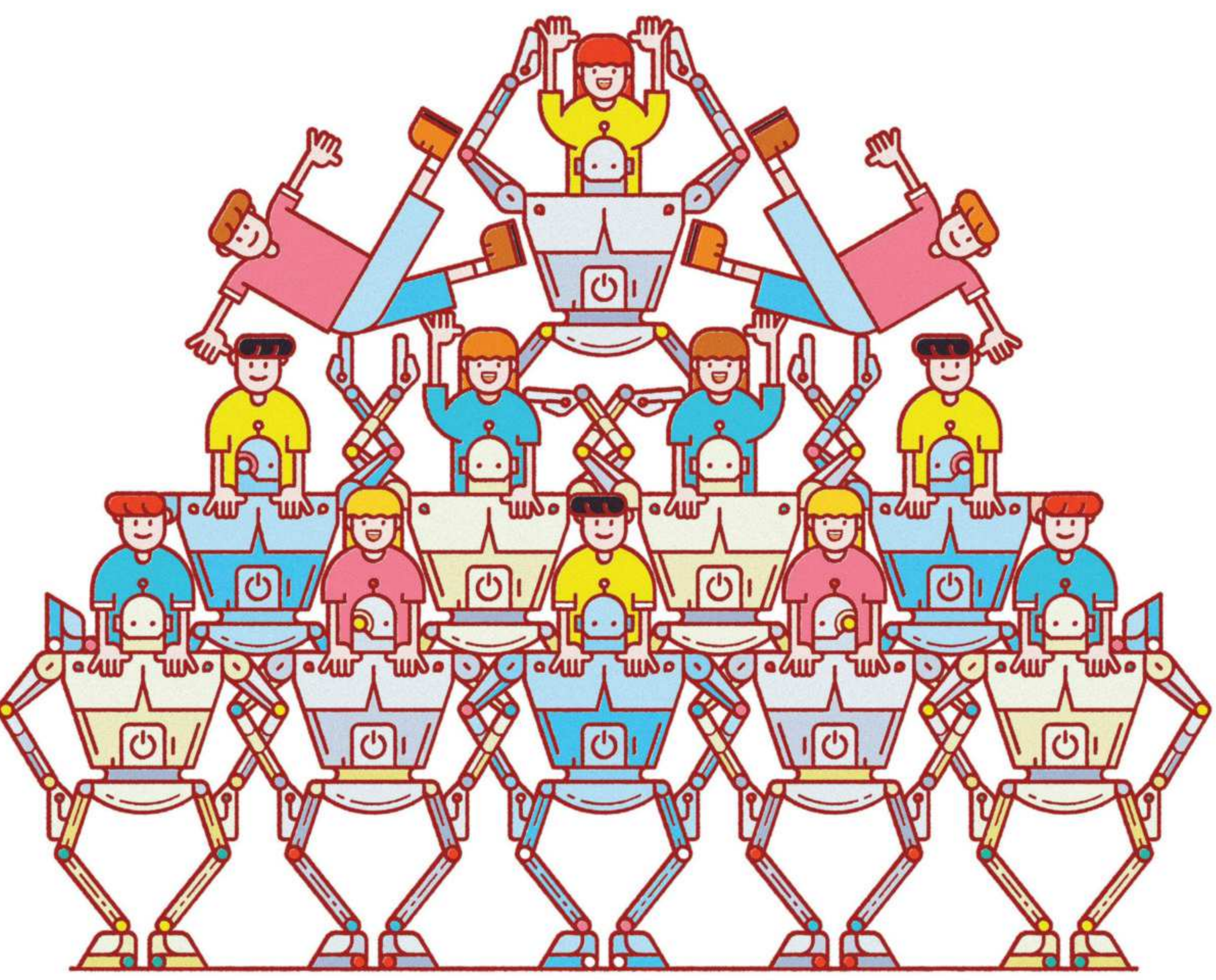
Smart machines are helping humans expand their abilities in three ways. They can *amplify* our cognitive strengths; *interact* with customers and employees to free us for higher-level tasks; and *embody* human skills to extend our physical capabilities.

Amplifying. Artificial intelligence can boost our analytic and decision-making abilities by providing the right information at the right time. But it can also heighten creativity. Consider how Autodesk's Dreamcatcher AI enhances the imagination of even exceptional designers. A designer provides Dreamcatcher with criteria about the desired product—for example, a chair able to support up to 300 pounds, with a seat 18 inches off the ground, made of materials costing less than $75, and so on. She can also supply information about other chairs that she finds attractive. Dreamcatcher then churns out thousands of designs that match those criteria, often sparking ideas that the designer might not have initially considered. She can then guide the software, telling it which chairs she likes or doesn't, leading to a new round of designs.

Throughout the iterative process, Dreamcatcher performs the myriad calculations needed to ensure that each proposed design meets the specified criteria. This frees the designer to concentrate on deploying uniquely human strengths: professional judgment and aesthetic sensibilities.

Interacting. Human-machine collaboration enables companies to interact with employees and customers in novel, more effective ways. AI agents like Cortana, for example, can facilitate communications between people or on behalf of people, such as by transcribing a meeting and distributing a voice-searchable version to those who couldn't attend. Such applications are inherently scalable—a single chatbot, for instance, can provide routine customer service to large numbers of people simultaneously, wherever they may be.

SEB, a major Swedish bank, now uses a virtual assistant called Aida to interact with millions of customers. Able to handle natural-language conversations, Aida has access to vast stores of data and can answer many frequently asked questions, such as how to open an account or make cross-border payments. She can also ask callers follow-up questions to solve their problems, and she's able to analyze a caller's tone of voice (frustrated versus appreciative, for instance) and use that information to provide better service later. Whenever the system can't resolve an



issue—which happens in about 30% of cases—it turns the caller over to a human customer-service representative and then monitors that interaction to learn how to resolve similar problems in the future. With Aida handling basic requests, human reps can concentrate on addressing more-complex issues, especially those from unhappy callers who might require extra hand-holding.

Embodying. Many AIs, like Aida and Cortana, exist principally as digital entities, but in other applications the intelligence is embodied in a robot that augments a human worker. With their sophisticated sensors, motors, and actuators, AI-enabled machines can now recognize people and objects and work safely alongside humans in factories, warehouses, and laboratories.

In manufacturing, for example, robots are evolving from potentially dangerous and "dumb" industrial machines into smart, context-aware "cobots." A cobot arm might, for example, handle repetitive actions that require heavy lifting, while a person performs complementary tasks that require dexterity and human judgment, such as assembling a gear motor.

Hyundai is extending the cobot concept with exoskeletons. These wearable robotic devices, which adapt to the user and location in real time, will enable industrial workers to perform their jobs with superhuman endurance and strength.

REIMAGINING YOUR BUSINESS

In order to get the most value from AI, operations need to be redesigned. To do this, companies must first discover and describe an operational area that can be improved. It might be a balky internal process (such as HR's slowness to fill staff positions), or it could be a previously intractable problem that can now be addressed using AI (such as quickly identifying adverse drug reactions across patient populations). Moreover, a number of new AI and advanced analytic techniques can help surface previously invisible problems that are amenable to AI solutions (see the sidebar "Revealing Invisible Problems").

Next, companies must develop a solution through co-creation—having stakeholders envision how they might collaborate with AI systems to improve a process. Consider the case of a large agricultural company that wanted to deploy AI technology to help farmers.

At Mercedes-Benz, cobot arms guided by human workers pick up and place heavy parts, becoming an extension of the worker's body.

An enormous amount of data was available about soil properties, weather patterns, historical harvests, and so forth, and the initial plan was to build an AI application that would more accurately predict future crop yields. But in discussions with farmers, the company learned of a more pressing need. What farmers really wanted was a system that could provide real-time recommendations on how to increase productivity—which crops to plant, where to grow them, how much nitrogen to use in the soil, and so on. The company developed an AI system to provide such advice, and the initial outcomes were promising; farmers were happy about the crop yields obtained with the AI's guidance. Results from that initial test were then fed back into the system to refine the algorithms used. As with the discovery step, new AI and analytic techniques can assist in co-creation by suggesting novel approaches to improving processes.

The third step for companies is to scale and then sustain the proposed solution. SEB, for example, originally deployed a version of Aida internally to assist 15,000 bank employees but thereafter rolled out the chatbot to its one million customers.

Through our work with hundreds of companies, we have identified five characteristics of business processes that companies typically want to improve: flexibility, speed, scale, decision making, and personalization. When reimagining a business process, determine which of these characteristics is central to the desired transformation, how intelligent collaboration could be harnessed to address it, and what alignments and trade-offs with other process characteristics will be necessary.

Flexibility. For Mercedes-Benz executives, inflexible processes presented a growing challenge. Increasingly, the company's most profitable customers had been demanding individualized S-class sedans, but the automaker's assembly systems couldn't deliver the customization people wanted.

Traditionally, car manufacturing has been a rigid process with automated steps executed by "dumb" robots. To improve flexibility, Mercedes replaced some of those robots with AI-enabled cobots and redesigned its processes around human-machine collaborations. At the company's plant near Stuttgart, Germany, cobot arms guided by human workers pick up and place heavy parts, becoming an extension of the worker's body. This system puts the worker in control of the build of each car, doing less manual labor and more of a "piloting" job with the robot.

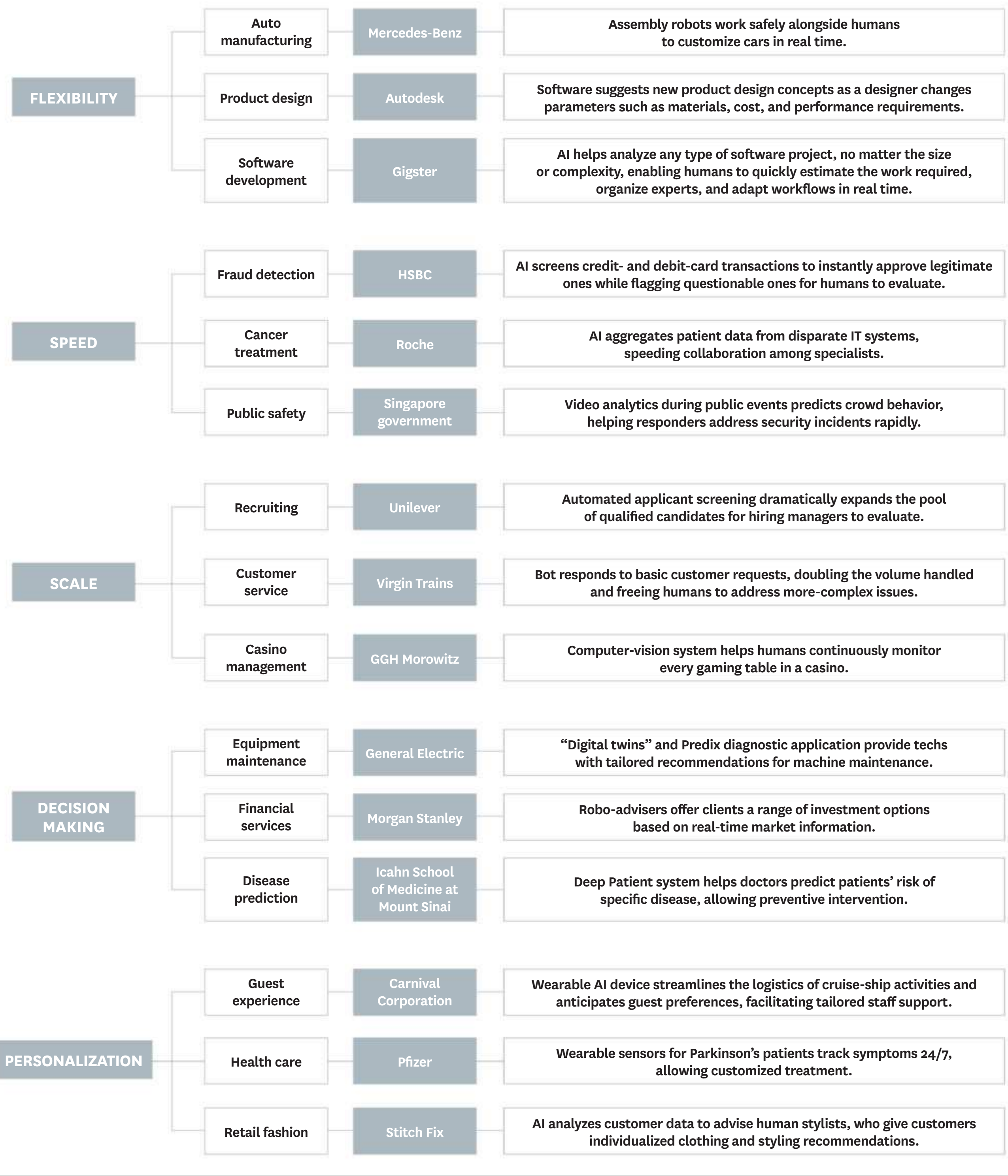
The company's human-machine teams can adapt on the fly. In the plant, the cobots can be reprogrammed easily with a tablet, allowing them to handle different tasks depending on changes in the workflow. Such agility has enabled the manufacturer to achieve unprecedented levels of customization. Mercedes can individualize vehicle production according to the real-time choices consumers make at dealerships, changing everything from a vehicle's dashboard components to the seat leather to the tire valve caps. As a result, no two cars rolling off the assembly line at the Stuttgart plant are the same.

Speed. For some business activities, the premium is on speed. One such operation is the detection of credit-card fraud. Companies have just seconds to determine whether they should approve a given transaction. If it's fraudulent, they will most likely have to eat that loss. But if they deny a legitimate transaction, they lose the fee from that purchase and anger the customer.

Like most major banks, HSBC has developed an AI-based solution that improves the speed and accuracy of fraud detection. The AI monitors and scores millions of transactions daily, using data on purchase location and customer behavior, IP addresses, and other information to identify subtle patterns that signal possible fraud. HSBC first implemented the system in the United States, significantly reducing the rate of undetected fraud and false positives,

ENHANCING PERFORMANCE

At organizations in all kinds of industries, humans and AI are collaborating to improve five elements of business processes.



Element	Area	Organization	Collaboration
FLEXIBILITY	Auto manufacturing	Mercedes-Benz	Assembly robots work safely alongside humans to customize cars in real time.
	Product design	Autodesk	Software suggests new product design concepts as a designer changes parameters such as materials, cost, and performance requirements.
	Software development	Gigster	AI helps analyze any type of software project, no matter the size or complexity, enabling humans to quickly estimate the work required, organize experts, and adapt workflows in real time.
SPEED	Fraud detection	HSBC	AI screens credit- and debit-card transactions to instantly approve legitimate ones while flagging questionable ones for humans to evaluate.
	Cancer treatment	Roche	AI aggregates patient data from disparate IT systems, speeding collaboration among specialists.
	Public safety	Singapore government	Video analytics during public events predicts crowd behavior, helping responders address security incidents rapidly.
SCALE	Recruiting	Unilever	Automated applicant screening dramatically expands the pool of qualified candidates for hiring managers to evaluate.
	Customer service	Virgin Trains	Bot responds to basic customer requests, doubling the volume handled and freeing humans to address more-complex issues.
	Casino management	GGH Morowitz	Computer-vision system helps humans continuously monitor every gaming table in a casino.
DECISION MAKING	Equipment maintenance	General Electric	"Digital twins" and Predix diagnostic application provide techs with tailored recommendations for machine maintenance.
	Financial services	Morgan Stanley	Robo-advisers offer clients a range of investment options based on real-time market information.
	Disease prediction	Icahn School of Medicine at Mount Sinai	Deep Patient system helps doctors predict patients' risk of specific disease, allowing preventive intervention.
PERSONALIZATION	Guest experience	Carnival Corporation	Wearable AI device streamlines the logistics of cruise-ship activities and anticipates guest preferences, facilitating tailored staff support.
	Health care	Pfizer	Wearable sensors for Parkinson's patients track symptoms 24/7, allowing customized treatment.
	Retail fashion	Stitch Fix	AI analyzes customer data to advise human stylists, who give customers individualized clothing and styling recommendations.

REVEALING INVISIBLE PROBLEMS

Former U.S. Defense Secretary Donald Rumsfeld once famously distinguished among "known knowns," "known unknowns," and "unknown unknowns"—things you're not even aware you don't know. Some companies are now using AI to uncover unknown unknowns in their businesses. Case in point: GNS Healthcare applies machine-learning software to find overlooked relationships among data in patients' health records and elsewhere. After identifying a relationship, the software churns out numerous hypotheses to explain it and then suggests which of those are the most likely. This approach enabled GNS to uncover a new drug interaction hidden in unstructured patient notes. CEO Colin Hill points out that this is not garden-variety data mining to find associations. "Our machine-learning platform is not just about seeing patterns and correlations in data," he says. "It's about actually discovering causal links."

and then rolled it out in the UK and Asia. A different AI system used by Danske Bank improved its fraud-detection rate by 50% and decreased false positives by 60%. The reduction in the number of false positives frees investigators to concentrate their efforts on equivocal transactions the AI has flagged, where human judgment is needed.

The fight against financial fraud is like an arms race: Better detection leads to more-devious criminals, which leads to better detection, which continues the cycle. Thus the algorithms and scoring models for combating fraud have a very short shelf life and require continual updating. In addition, different countries and regions use different models. For these reasons, legions of data analysts, IT professionals, and experts in financial fraud are needed at the interface between humans and machines to keep the software a step ahead of the criminals.

Scale. For many business processes, poor scalability is the primary obstacle to improvement. That's particularly true of processes that depend on intensive human labor with minimal machine assistance. Consider, for instance, the employee recruitment process at Unilever. The consumer goods giant was looking for a way to diversify its 170,000-person workforce. HR determined that it needed to focus on entry-level hires and then fast-track the best into management. But the company's existing processes weren't able to evaluate potential recruits in sufficient numbers—while giving each applicant individual attention—to ensure a diverse population of exceptional talent.

Here's how Unilever combined human and AI capabilities to scale individualized hiring: In the first round of the application process, candidates are asked to play online games that help assess traits such as risk aversion. These games have no right or wrong answers, but they help Unilever's AI figure out which individuals might be best suited for a particular position. In the next round, applicants are asked to submit a video in which they answer questions designed for the specific position they're interested in. Their responses are analyzed by an AI system that considers not just what they say but also their body language and tone. The best candidates from that round, as judged by the AI, are then invited to Unilever for in-person interviews, after which humans make the final hiring decisions.

It's too early to tell whether the new recruiting process has resulted in better employees. The company has been closely tracking the success of those hires, but more data is still needed. It is clear, however, that the new system has greatly broadened the scale of Unilever's recruiting. In part because job seekers can easily access the system by smartphone, the number of applicants doubled to 30,000 within a year, the number of universities represented surged from 840 to 2,600, and the socioeconomic diversity of new hires increased. Furthermore, the average time from application to hiring decision has dropped from four months to just four weeks, while the time that recruiters spend reviewing applications has fallen by 75%.

Decision making. By providing employees with tailored information and guidance, AI can help them reach better decisions. This can be especially valuable for workers in the trenches, where making the right call can have a huge impact on the bottom line.

Consider the way in which equipment maintenance is being improved with the use of "digital twins"—virtual models of physical equipment. General Electric builds such software models of its turbines and other industrial products and continually updates them with operating data streaming from the equipment. By collecting readings from large numbers of machines in the field, GE has amassed a wealth of information on normal and aberrant performance. Its Predix application, which uses machine-learning algorithms, can now predict when a specific part in an individual machine might fail.

This technology has fundamentally changed the decision-intensive process of maintaining industrial equipment. Predix might, for example, identify some unexpected rotor wear and tear in a turbine, check the

turbine's operational history, report that the damage has increased fourfold over the past few months, and warn that if nothing is done, the rotor will lose an estimated 70% of its useful life. The system can then suggest appropriate actions, taking into account the machine's current condition, the operating environment, and aggregated data about similar damage and repairs to other machines. Along with its recommendations, Predix can generate information about their costs and financial benefits and provide a confidence level (say, 95%) for the assumptions used in its analysis.

Without Predix, workers would be lucky to catch the rotor damage on a routine maintenance check. It's possible that it would go undetected until the rotor failed, resulting in a costly shutdown. With Predix, maintenance workers are alerted to potential problems before they become serious, and they have the needed information at their fingertips to make good decisions—ones that can sometimes save GE millions of dollars.

Personalization. Providing customers with individually tailored brand experiences is the holy grail of marketing. With AI, such personalization can now be achieved with previously unimaginable precision and at vast scale. Think of the way the music streaming service Pandora uses AI algorithms to generate personalized playlists for each of its millions of users according to their preferences in songs, artists, and genres. Or consider Starbucks, which, with customers' permission, uses AI to recognize their mobile devices and call up their ordering history to help baristas make serving recommendations. The AI technology does what it does best, sifting through and processing copious amounts of data to recommend certain offerings or actions, and humans do what they do best, exercising their intuition and judgment to make a recommendation or select the best fit from a set of choices.

The Carnival Corporation is applying AI to personalize the cruise experience for millions of vacationers through a wearable device called the Ocean Medallion and a network that allows smart devices to connect. Machine learning dynamically processes the data flowing from the medallion and from sensors and systems throughout the ship to help guests get the most out of their vacations. The medallion streamlines the boarding and debarking processes, tracks the guests' activities, simplifies purchasing by connecting their credit cards to the device, and acts as a room key. It also connects to a system that anticipates guests' preferences, helping crew members deliver personalized service to each guest by suggesting tailored itineraries of activities and dining experiences.

THE NEED FOR NEW ROLES AND TALENT

Reimagining a business process involves more than the implementation of AI technology; it also requires a significant commitment to developing employees with what we call "fusion skills"—those that enable them to work effectively at the human-machine interface. To start, people must learn to delegate tasks to the new technology, as when physicians trust computers to help read X-rays and MRIs. Employees should also know how to combine their distinctive human skills with those of a smart machine to get a better outcome than either could achieve alone, as in robot-assisted surgery. Workers must be able to teach intelligent agents new skills and undergo training to work well within AI-enhanced processes. For example, they must know how best to put questions to an AI agent to get the information they need. And there must be employees, like those on Apple's differential privacy team, who ensure that their companies' AI systems are used responsibly and not for illegal or unethical purposes.

We expect that in the future, company roles will be redesigned around the desired outcomes of reimagined processes, and corporations will increasingly be organized around different types of skills rather than around rigid job titles. AT&T has already begun that transition as it shifts from landline telephone services to mobile networks and starts to retrain 100,000 employees for new positions. As part of that effort, the company has completely overhauled its organizational chart: Approximately 2,000 job titles have been streamlined into a much smaller number of broad categories encompassing similar skills. Some of those skills are what one might expect (for example, proficiency in data science and data wrangling), while others are less obvious (for instance, the ability to use simple machine-learning tools to cross-sell services).

MOST ACTIVITIES AT the human-machine interface require people to *do new and different things* (such as train a chatbot) and to *do things differently* (use that chatbot to provide better customer service). So far, however, only a small number of the companies we've surveyed have begun to reimagine their business processes to optimize collaborative intelligence. But the lesson is clear: Organizations that use machines merely to displace workers through automation will miss the full potential of AI. Such a strategy is misguided from the get-go. Tomorrow's leaders will instead be those that embrace collaborative intelligence, transforming their operations, their markets, their industries, and—no less important—their workforces.

HBR Reprint R1804J

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"Managers Don't Have All the Answers"

A CONVERSATION WITH JPMORGAN CHASE CEO JAMIE DIMON

BY ADI IGNATIUS

The *New York Times* once referred to Jamie Dimon as "America's least-hated banker." For a Wall Street titan, that's about as good as it gets.

Dimon has been at the helm of JPMorgan Chase for more than 12 years. At 62, boyish and sometimes blunt, he remains true to his roots as a straight-talking guy from Queens (albeit one who has an MBA from Harvard Business School, runs the biggest bank in the United States, and is a billionaire).

JPMorgan weathered the 2008 financial crisis better than most. It was perhaps the healthiest of America's big banks but felt compelled to join others in taking billions of dollars in a government bailout—a plan meant to avoid singling out banks with truly dire problems. To this day it irritates Dimon that his bank was lumped in with the ones that got themselves in deep financial trouble.

He suffered a reputational hit of his own in 2012, when a trader in JPMorgan's UK office—nicknamed the "London Whale"—made a series of derivative transactions that mushroomed into $6.2 billion in losses. In a letter to shareholders Dimon called the episode "the stupidest and most embarrassing situation I have ever been a part of."

Nevertheless, Dimon has led JPMorgan on a steady path of growth. Under his watch the bank acquired and successfully integrated two once-troubled institutions: Bear Stearns and Washington Mutual. And it has continued to expand nearly every aspect of its business. Its 2016 profit of $24.7 billion (on revenue of $95.7 billion) is reportedly the largest ever for a U.S. bank.

PHOTOGRAPHY BY ARTURO OLMOS

Dimon has evolved as a leader as well, most notably since his recovery from throat cancer four years ago. He is more outspoken on political and social issues, well beyond those pertaining to financial regulation. And he is the lead cheerleader for JPMorgan's deep engagement in helping to rebuild the economically troubled city of Detroit.

Dimon met with HBR to talk about social responsibility, CEO activism, and the secret to great leadership. Here's an edited version of the conversation.

HBR: The public's view of Wall Street is still pretty negative. Do you see it as part of your role to try to improve that?

DIMON: It's hard to change that perception, because banks are different from normal businesses. If you walk into Walmart and have cash, they'll sell you something. But banks have to turn people down. We won't make the loan. Or we'll give you the loan but tell you that to meet your covenants, you need to practically sell your firstborn. Everyone has a horror story. We just have to do our job, serve our clients well, and let that be our reputation.

Does this negativity carry a cost?

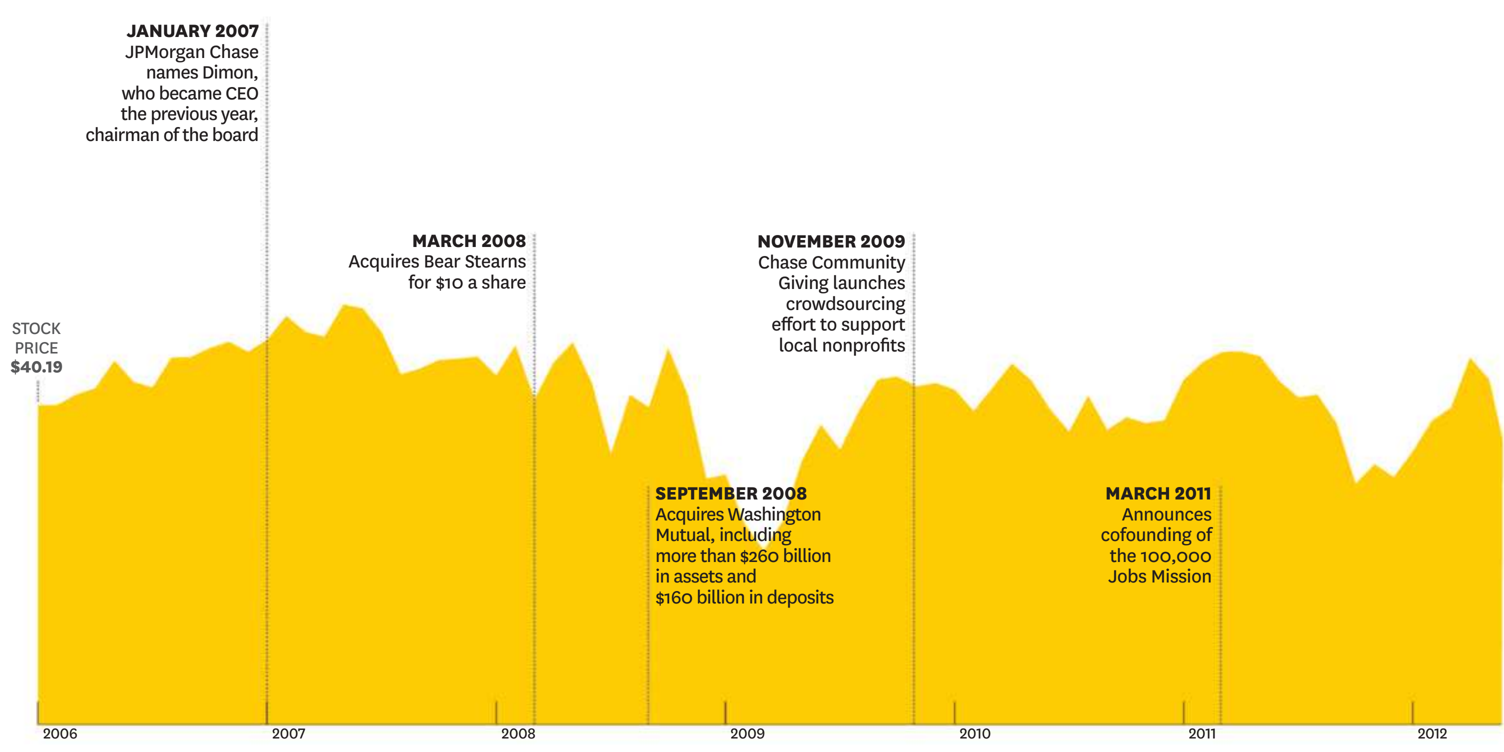
Yes, it matters. Part of that negative perception was well earned during the financial crisis. Not all banks were responsible for the failures and for the downturn in the economy, but we all got painted with the same brush: "They're all fat cats. They all got bailed out." It will take a generation for the industry to rebuild its reputation.

A far greater concentration of assets is now in just a few U.S. banks' hands. Is that OK?

Yes, I think it is. People have to be rational about this. The banking industry is far less concentrated in the United States than in many other countries: Japan, France, the UK. If you're global and diversified, you

JPMORGAN CHASE UNDER JAMIE DIMON

The bank has weathered its share of challenges and is now prospering.



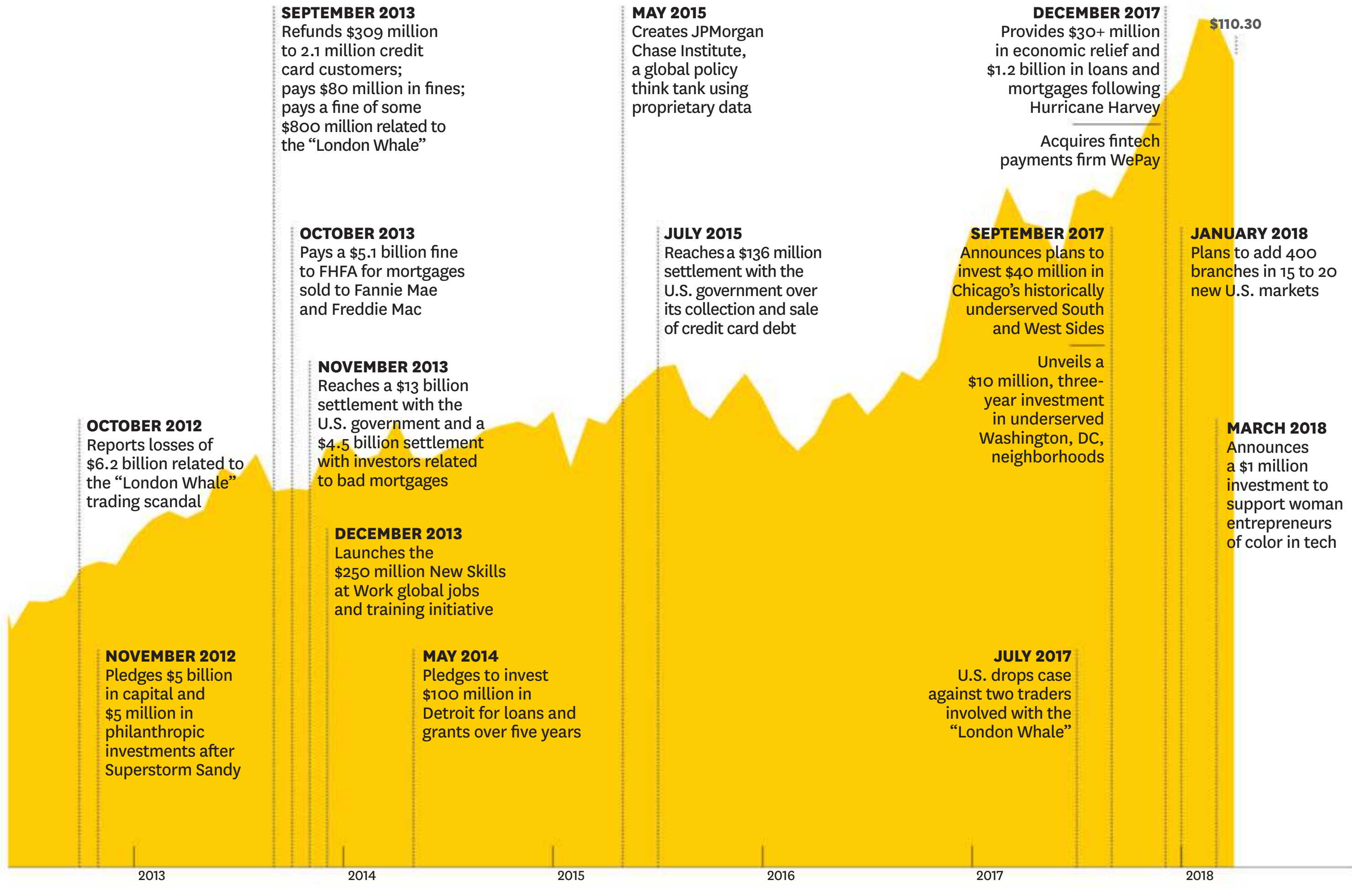
have to be large. It's hard to compete if you don't have economies of scale.

Does that mean "too big to fail" is a meaningless concept?
You don't want banks that are too big to fail—if the result of failure is that the people have to pay for it or the economy goes down. But a company should be allowed to fail in a way that is safe for the economy and that doesn't require taxpayers to pay the price.

Have the laws enacted since the financial crisis helped with that risk?
The new capital-equity regulations are good. Today Lehman Brothers [which collapsed during the 2008 crisis] would be required to have three times as much equity and four times as much liquidity—and if it were in trouble, it probably wouldn't fail. If a bank does fail, regulators now have a mechanism for unwinding things in an orderly way. Plus, any money lost will be charged back to the banks, not to the American people.

Are you happy in general with the amount of regulation in place these days?
Just to be clear, no big bank wants to throw out Dodd-Frank and rewrite everything. And some of the regulations are actually good: stress-testing, living wills, capital-liquidity requirements, transparency. But other aspects were overdone and not coordinated. If we can change those things—through calibration and eliminating duplication—we'll have a safer system that's in a better position to finance growth.

The biggest risk to the system these days might be cyberattacks. How well prepared is JPMorgan Chase?
We spend $700 million a year in that area. That said, no matter how good you are, your adversary is good



too. It's an arms race. We're working closely with the government, but we need to do more and do it faster.

What other potential threats concern you?
We do more than 100 stress tests a week—related to geopolitics, capital downturns, recession, war. For each one, we don't just guess at the probabilities; we prepare for the worst. As a result, we have the capital and the earnings and the capabilities to withstand any of those things—just as we managed to survive during the financial crisis.

What do you consider to be your chief competitive threat?
The biggest potential disruption to our business is new forms of payment. You have PayPal, Venmo, Alipay, and more. These companies are doing a good job of embedding basic banking services in their chats, their social, their shopping experience.

Do you view Chinese banks as a threat?
I think Chinese banks could be big competitors. They're supported by their government. They make more money than we do. They have a huge home market, which is a competitive advantage. And they adopt a strategy of following their own companies overseas to handle basic banking services and then moving upscale to more-sophisticated services. They're coming. They're ambitious.

What's your view on cryptocurrency? A few months ago you said you thought bitcoin was a fraud and that you'd fire any trader dealing in it.

The biggest potential disruption to our business is new forms of payment. PayPal, Venmo, Alipay, are embedding basic banking services in their chats, their social, their shopping experience.

I probably shouldn't say any more about cryptocurrency. But it's not the same as gold or fiat currencies. Those are supported by law, police, courts. They're not replicable, and there are strictures on them. Blockchain, on the other hand, is real. We're testing it and will use it for a whole lot of things.

Many of your fellow CEOs complain that short-term pressure prevents them from doing things for the long-term good of the company. Do you feel that?
We invest a considerable amount in projects that have a long-term payoff. Some of them are table stakes for

a business—investments in training, in branches, in technology. You can't stop-start them. They're not done in a single year. There's no magic to 12 months.

But what about the pressure to make your numbers?
I'm a fanatic about numbers, but some of what goes into earnings estimates is fiction. You might develop a product that could hurt your earnings for the year, but you're doing the right thing for the company. So you have to explain it to shareholders, and the smart ones will say, "Go ahead. I don't care if my quarterly earnings go down."

What's your view on providing quarterly earnings forecasts?
We don't give quarterly earnings forecasts, and I don't think any CEO should. They put the company in a terrible position. You can't possibly account for all the things you need to know to create that forecast. I do believe in transparency. I'll tell people what we plan to spend on technology, or how many branches we'll open. But earnings are based on decisions that have been made over the past 10 years—or maybe on the weather and how it affects business. An earnings forecast suggests precision, but we can't be precise on so many factors. It gives a false sense of security.

In your recent letter to shareholders, you seemed almost apologetic that you had to do some stock buybacks. Is that a fair characterization?
It's absolutely fair. The goal is to use your capital well. When you can't use it to grow—and we couldn't for years, because of regulatory issues—then you have to do something. You can raise your dividends or, rather than let it sit in your pocket, you can buy back stock. But I would prefer to spend it to grow the business.

Globalism has gotten a bad name lately. Do you view yourself as a globalist?
Yes. Trade and technology have created huge benefits. They've lifted billions of people out of poverty. They've eradicated diseases. People are going to live to 75, 85, 95, and are healthier longer. That said, globalism has downsides, and we should do something about them. The benefits of trade are huge but diffuse. For towns that lose factories, for example, we haven't adequately thought about reeducation, relocation, income assistance. If you lose a factory job that paid $85,000 and start driving a cab to make $22,000, it's demoralizing. But there are fixes: in education, work skills, earned income tax credits.

It seems that many people didn't appreciate the downside until the results of the past U.S. election.
A part of society is suffering, and we—I'm pointing at all of us—made a mistake in not focusing more on that. But it's not a Democrat or Republican thing. We had the Great Recession and then we had an anemic recovery. It's taken a long time to create jobs, increase wages, and do the basic things that help people. About 40% of Americans make less than $15 an hour. If you're making $20,000 a year these days, you're not making a living wage.

You're getting into issues of inequality, so I'd be remiss in not asking whether you think executives are paid too much. [Dimon's total compensation last year was $29.5 million.]
That issue is a sideshow when you're trying to solve inequality. If you recirculated all the money CEOs make, it wouldn't change what I'm talking about. You're always going to have some well-paid people—in every society, in every profession. And you kind of want that, where the fight for talent makes you pay people more. JPMorgan pays a lot of people well and we have raised hourly wages to between $15 and $18 an hour, depending on the local cost of living, plus benefits. The fix to the problem is in growth, jobs, education, tax policy. It's not in hurting business through regulations. It's not in blaming well-paid people. It may feel great as a political argument, but it's not going to fix the problem.

Let's shift to CEO activism. More and more CEOs seem to be taking positions on big social issues. Are you in favor of that?
Large companies in America have long been involved in communities and philanthropy and public policy. In recent years, though, some executives have tried not to get involved to avoid being criticized or attacked. I actually think it's important to be involved. If you want the right public policy, you have to be an advocate. And you can't be parochial. You can't talk only about that one little regulation that's going to help your company. You need to talk about tax policy, trade, immigration, technology.

How do you pick your battles?
I try not to worry about whose "side" we're on. I try to do the right thing and then explain it to people. That said, some issues aren't related to my company or are societal. On those questions it's up to the voters to decide. But we will be involved in areas where we can be helpful: affordable housing, work skills, financing for entrepreneurs, growth policies for cities.

Your bank has become deeply involved in the rebuilding of Detroit. What was the impetus for that?
It grew out of a meeting I had five years ago with Lee Saunders, a labor leader, whose union was calling for JPMorgan to split the CEO and chairman roles. I asked him, "Do you really care about this?" and he said, "No, what I really care about is Detroit." So we talked about

the city. We're the biggest bank in Detroit, so we have a natural interest in this issue.

How did that evolve into your current engagement?
That began in 2014, when Mike Duggan became Detroit's mayor. He's a white man in a town that's 75% black, and he went door-to-door as a write-in candidate. He wanted to get things done: sanitation, job creation, affordable housing, turning on the streetlights. We asked how we could help, and soon we were sending teams to meet with people all over the city to understand the issues. We came up with a plan—which the mayor reviews each quarter—to invest $100 million by 2019 to help launch small businesses, retrain workers, and revive the property market. We've since increased that amount to $150 million.

How does that activity relate to your core business?
We're lending to small businesses, to consumers. Some of it is with philanthropy dollars. But even there we look at the returns—what works, what doesn't. And some of it is in the form of nontraditional banking. Banks normally won't lend for rehabbed homes. But for us, the return in these cases is not in money. It's in how many people get employed; how many people get trained; how many small businesses get financed.

How do you try to ensure that these projects will succeed?
If you have alignment among the mayor, the civic societies, the nonprofits, and business, you can get a lot done. If not, you're just wasting money. We worked with local financial institutions to set up the Entrepreneurs of Color fund, which has made more than 50 small-business loans. Normally those borrowers wouldn't meet our credit standards, and we would be criticized by regulators. But this has worked. All but one of the loans are repaying. We're doing a mini version of this in Chicago and Washington, DC. Eventually I'd like to do it in every major city in America.

Because it's the right thing to do, or because it will materially help your business?
I don't spend a lot of time thinking about that distinction. I believe these programs can materially help the black community. That's a very good reason. And we're going to see some return on our investment. It's also self-perpetuating. You get your money back, and you can redeploy it in another loan.

This doesn't sound like a standard shareholder-governance approach.
My primary responsibility is to shareholder value over a long period of time—and you can't have shareholder value without serving your customers well. We're intrinsically linked to the community. We care about what's going on in Detroit. It's good to help society. Our customers love it; our employees love it.

You've been CEO for a dozen years. What have you learned about how to be effective in the job?
In some ways it's about details, facts, and analysis. It involves discipline, no different from exercising every day. The CEO has to drive this, because companies don't. Organizations get bureaucratic. They slow down. There's too much "strategize" and B.S. like that. They become a petri dish of politics.

What's the secret to great leadership?
You need humility and heart. You don't have to be that good at all the analytical stuff. But if you don't get the best out of your people, you won't succeed. People want to be treated with respect. They have ideas. They want to contribute. So you have to include them and not hold "the meeting after the meeting," where decisions are actually made in dark rooms by a small group of friends. Managers need to understand that they don't have all the answers. A bank teller often has better answers than I do. Tellers are actually using the system we rolled out, so they can tell us if it's dumb.

How do you sustain that kind of environment?
At JPMorgan Chase we organize a bus trip every year. The management teams take part, and so do the tellers. We go to call centers and operating centers and see customers and CEOs and have great fun. When people get on the bus, we give them beer and immunity: Say whatever you want—you won't insult anyone here. They speak out, for example, about what other banks are doing well. And we follow up. That's what respect looks like. It doesn't just mean that I treat you nicely. It's that I understand I need to do a better job, not only for myself but for you, too.

Banks normally won't lend for rehabbed homes. But for us the return in these cases is not in money. It's in how many people get employed; how many people get trained; how many small businesses get financed.

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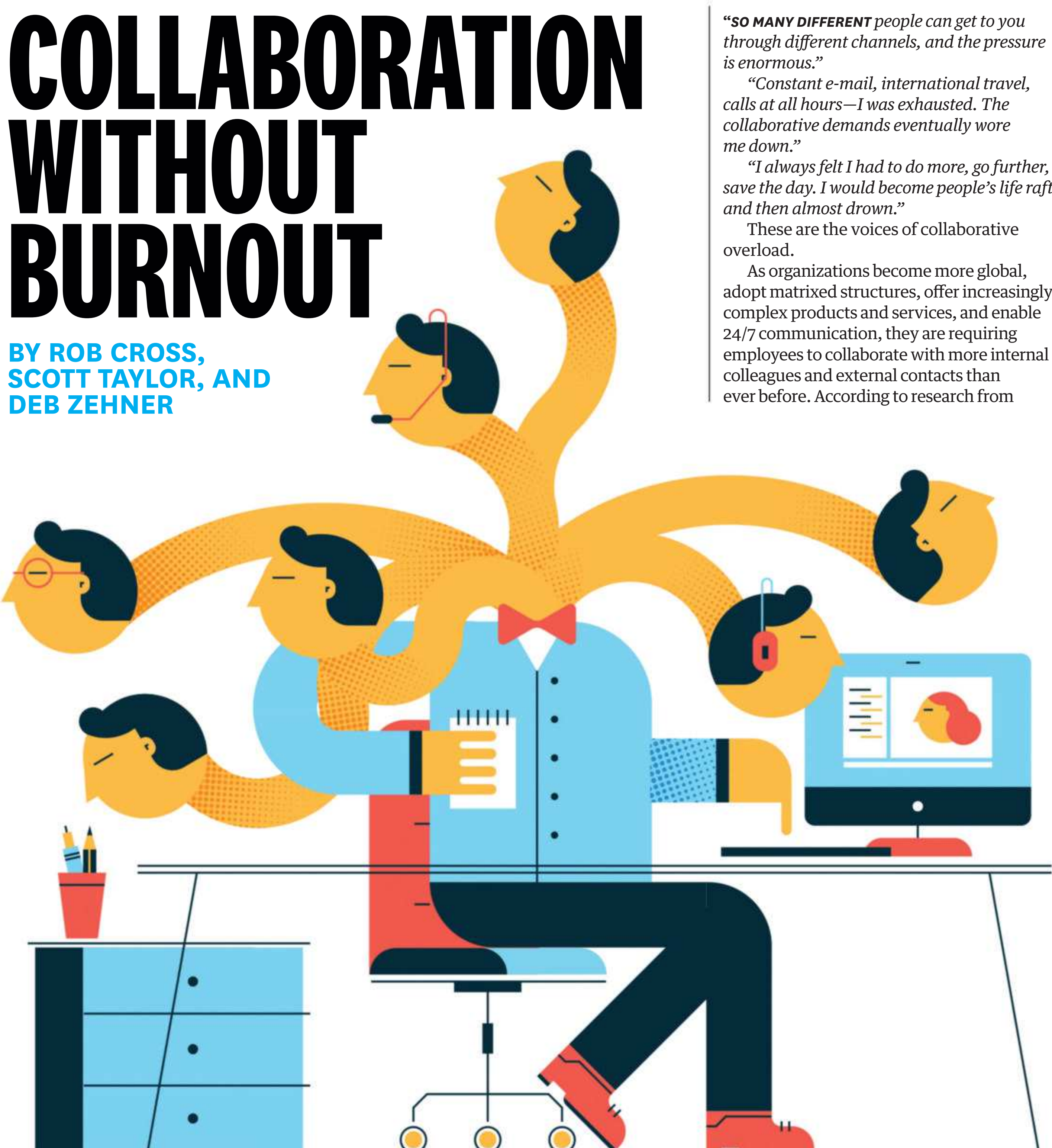
MANAGING YOURSELF

COLLABORATION WITHOUT BURNOUT

BY ROB CROSS, SCOTT TAYLOR, AND DEB ZEHNER



*“**SO MANY DIFFERENT** people can get to you through different channels, and the pressure is enormous.”*

“Constant e-mail, international travel, calls at all hours—I was exhausted. The collaborative demands eventually wore me down.”

“I always felt I had to do more, go further, save the day. I would become people’s life raft and then almost drown.”

These are the voices of collaborative overload.

As organizations become more global, adopt matrixed structures, offer increasingly complex products and services, and enable 24/7 communication, they are requiring employees to collaborate with more internal colleagues and external contacts than ever before. According to research from

Connected Commons, most managers now spend 85% or more of their work time on e-mail, in meetings, and on the phone, and the demand for such activities has jumped by 50% over the past decade. Companies benefit, of course: Faster innovation and more-seamless client service are two by-products of greater collaboration. But along with all this comes significantly less time for focused individual work, careful reflection, and sound decision making. A 2016 HBR article coauthored by one of us dubbed this destructive phenomenon *collaborative overload* and suggested ways that organizations might combat it.

Over the past few years we've conducted further research—both quantitative and qualitative—to better understand the problem and uncover solutions that individuals can implement on their own. Working with 20 global organizations in diverse fields (software, consumer products, professional services, manufacturing, and life sciences), we started by creating models of employees' collaborations and considering the effect of those interactions on engagement, performance, and voluntary attrition. We then used network analyses to identify efficient collaborators—people who work productively with a wide variety of others but use the least amount of their own and their colleagues' time—and interviewed 200 of them (100 men and 100 women) about their working lives. We learned a great deal about how overload happens and what leaders must do to avoid it so that they can continue to thrive.

Not surprisingly, we found that always-on work cultures, encroaching technology, demanding bosses, difficult clients, and inefficient coworkers were a big part of the problem, and most of those challenges do require organizational solutions. But we discovered in many cases that external time sinks were matched by another enemy: individuals' own mindsets and habits. Fortunately, people can overcome those obstacles themselves, right away, with some strategic self-management.

We uncovered best practices in three broad categories: *beliefs* (understanding why we take on too much); *role, schedule, and network* (eliminating unnecessary collaboration to make time for work that is aligned with professional aspirations and personal values); and *behavior* (ensuring that necessary or desired collaborative work is as productive as possible). Not all our recommendations will suit everyone: People's needs differ by personality, hierarchical level, and work context. But we found that when the people we studied took action on just four or five of them, they were able to claw back 18% to 24% of their collaborative time.

TWO TYPES OF OVERLOAD

Collaborative overload generally occurs in either a surge or a slow burn. A surge can result from a promotion, a request from a boss or a colleague to take on or help out with a project, or the desire to jump into an "extracurricular" work activity because you feel obligated or don't want to miss out. Consider Mike, an insurance company executive who was already managing multiple projects—one of which had his entire team working day and night to turn around a struggling segment of the business. When his boss asked him to help create a new unit that would allow the company to present a single face to the market, he felt he couldn't say no. It was a great development opportunity—to which his skills were perfectly suited—and it offered prime exposure to senior management. Yet he couldn't abandon his existing team in the midst of its work. So he decided to do both jobs at once.

A slow burn is more insidious and occurs through incremental increases in the volume, diversity, and pace of collaborative demands over time, as personal effectiveness leads to larger networks and greater scope of responsibilities. Go-to people in organizations suffer from this type of overload. As we gain experience, we often tend to take on more work, and our identities start to become intertwined with accomplishment, helping, or being in the know. We tend not to question what we are doing as we add tasks or work late into the night on e-mail. And, of course, our colleagues welcome these tendencies; as we gain reputations for competence and responsiveness, people in our networks bring us more work and requests. Ellen, an 18-year veteran of a *Fortune* 100 technology company, is a case in point. She was fiercely driven and took pride in her ability to help colleagues, solve problems, and cut through bureaucracy to get things done. Eventually, however, she felt weighed down by a list of projects and commitments that were "beyond the realm of doable."

Though Mike's and Ellen's situations are different, our research suggests that the solutions to their and others' overload problems are similar. They cannot continue to work the same way they always have and remain effective. They need to take better charge of their working lives.

RECOGNIZE HOW MUCH OVERLOAD IS DRIVEN BY YOUR DESIRE TO MAINTAIN A REPUTATION AS HELPFUL, KNOWLEDGEABLE, OR INFLUENTIAL.

WHY WE TAKE ON TOO MUCH

The first step in combating collaborative overload is to recognize how much of it is driven by your own desire to maintain a reputation as a helpful, knowledgeable, or influential colleague or to avoid the anxiety that stems from ceding control over or declining to participate in group work. For example, someone who engages in the entire life cycle of a small project, beyond the time when the need for her expertise has passed, might pride herself on supporting teammates and ensuring a high-quality result. But that's not the kind of collaboration that makes a difference over the long term; indeed, too much

of it will prevent her from doing more-important work.

Knowing why you accept collaborative work—above and beyond what your manager and your company demand—is how you begin to combat overload. When we counsel executives, we ask them to reflect on the specific identity-based triggers that most often lead them into overload. For example: Do you crave the feeling of accomplishment that comes from ticking less challenging items off your to-do list? Does your ambition to be influential or recognized for your expertise cause you to attend meetings or discussions that don't truly require your involvement? Do you pride yourself on being always ready to answer questions and pitch in on group work? Do you agree to take on collaborative activities because you're worried about being labeled a poor performer or not a team player? Are you uncomfortable staying away from certain issues or projects because you fear missing out on something or aren't sure the work will be done right without you? Most executives we've encountered answer yes to one if not several of those questions.

Efficient collaborators remember that saying yes to something always means saying no to—or participating less fully in—something else. They remind themselves that small wins (an empty in-box, a perfectly worded report, a single client call) are not always important ones. They think carefully about their areas of expertise and determine when they do, or don't, have value to add. They stop seeing themselves as indispensable and shift the source of their self-worth so that it comes from not just showcasing their own capabilities but also stepping away to let others develop theirs and gain visibility.

As one executive told us, "I have come to the realization that if people really need me, they will find me. I am probably skipping 30% of my meetings now, and work seems to be getting done just fine."

When Mike found himself at a breaking point with his twin projects, he realized how much of his self-worth derived from always saying yes to—and then achieving—the goals suggested to him. "It took falling down and a patient spouse to really see this pattern," he says. He decided that he needed to set clear priorities in both his career and his personal life. "Then saying no was not about my not coming through but about maintaining focus on what mattered."

Ellen, too, realized that her self-image as a helper—constantly looking for opportunities to contribute and never declining a request—had become problematic. "The difficult part is recognizing this tendency in the moment and working hard not to jump in," she acknowledges. "But I told my team how important this was and also asked a few people to be 'truth tellers' who caution me when they see it happening."

ELIMINATING THE UNNECESSARY

Next you'll need to restructure your role, schedule, and network to avoid the triggers you've identified and reduce or eliminate unnecessary collaboration. Rather than thinking things will get better on their own, living reactively, and falling into patterns dictated by other people's objectives, efficient collaborators play offense on collaborative overload. They clarify their "north star" objectives—the strengths they want to employ in their work and the values they want to embody, in the context of their organization's priorities—and then streamline their working lives in a way that buffers them against nonaligned requests.

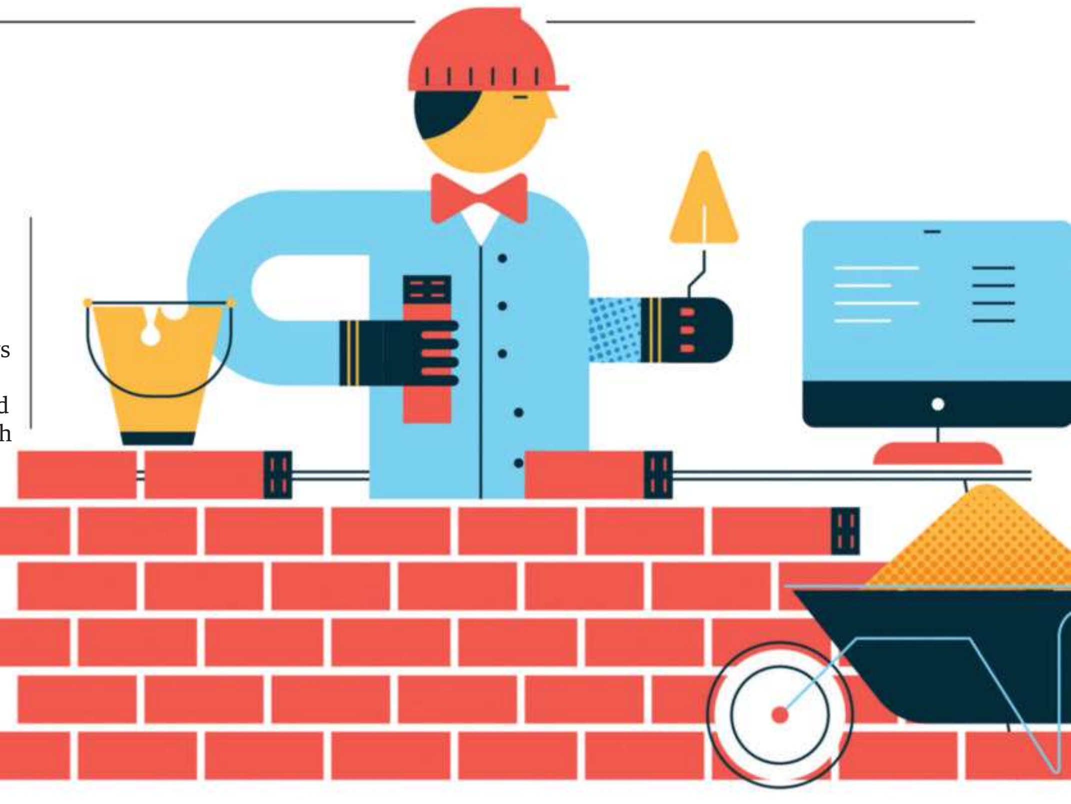
EFFICIENT COLLABORATORS THINK CAREFULLY ABOUT THEIR AREAS OF EXPERTISE AND DETERMINE WHEN THEY DO, OR DON'T, HAVE VALUE TO ADD.

Start by reviewing your calendar and e-mail communications on a regular basis, using a tool such as Microsoft's MyAnalytics or Cisco's "human network intelligence" platform. Look back four or five months to identify recurring group activities, meetings, or exchanges that aren't core to your success and could be declined or offered to others as a developmental opportunity. Consider decisions you're being pulled into unnecessarily and how processes or teams might be changed so that you needn't be involved. Recognize when you're being sought out for information or expertise in areas no longer central to your role or ambitions and figure out whether you could share your knowledge more widely on your company's intranet or if another go-to person might derive greater benefit from that collaboration.

At the same time, work to reset colleagues' expectations about the level and timeliness of your engagement. Clarify, for example, that not responding to a group e-mail or opting out of a meeting does not mean you lack interest or appreciation. Talk about your key priorities so that everyone knows what you need (and want) to spend the most time on. Ask colleagues about their interests and ambitions so that you can identify opportunities to distribute or delegate work. A key inflection point for all the executives we've counseled has been when they start seeing requests for collaboration as ways to activate and engage those in their networks rather than as adding to their own to-do lists.

Finally, block out time for reflective work and seek collaboration with those who can help you move toward your north star objectives. Mike focused on building capabilities in the business unit he directed. Instead of jumping at unrelated projects for political exposure, he began to differentiate himself through expertise and his team's contribution. Ellen's strategy was to create exceptionally clear boundaries: "I am there 8 AM to 6 PM, and people know I give 100%

To evaluate your state of collaborative overload, go to networkassessments.org and take the assessment built from this research.



then. But after that I don't let myself get drawn into unnecessary e-mail, calls, or late-night work just to help out."

Another leader described the shift like this: "Playing defense sucks. You are always reactive and living in fear. The only way to escape it is to get clarity on who you are and what you want to do and start forging a path and network that enable you to get there."

KEEPING IT PRODUCTIVE

Once you've taken stock of your collaborative workload, it's time to enhance the value of the collaboration you've chosen to participate in. Our research suggests that poorly run meetings are the biggest time sink in organizations. Even if you don't control the ones you attend, you can make them more productive by, for example, asking the leader to circulate an agenda or a pre-read before the gathering and a short e-mail on agreements, commitments, and next steps afterward. You can also limit your involvement by explaining that you have a hard stop (real or constructed) so that you're not stuck when others run overtime, and asking to attend only those portions for which you are needed or agreeing to half the time a colleague or employee requests. It's crucial to establish norms early on in any relationship or group. If you wait, problems will become harder to address.

You can also institute or encourage new norms for e-mails by addressing format (for example, observing a maximum length and choosing an outline structure with bullets, as opposed to full-text paragraphs), the use of "cc" and "reply all," and appropriate response times for various types of requests. Consider virtual collaboration tools (such as Google Docs), which offer a better medium for work that is exploratory (defining a problem space or brainstorming solutions) or integrative (when people with varying expertise, perspectives, or work assignments need to produce a joint solution). The key is to ensure that you're using the right tools at the right time and not worsening collaborative demands. You should also learn to recognize when a conversation has become too complicated or contentious for e-mail or chat and switch to a more efficient phone call or face-to-face meeting.

For one-on-one interactions, always consider whether you are consuming your counterpart's time efficiently. Ask yourself, "Am I clear on what I want to accomplish from a meeting or a conversation?" And invite others to be equally disciplined by asking early on, "So that I use your time well, would you quickly let me know what you hope we can accomplish together?"

When it comes to building your network, focus on the quality of the relationships, not the number of connections. We repeatedly found that efficient collaborators draw people to collaborative work by conferring status, envisioning joint success, diffusing ownership, and generating a sense of purpose and energy around an outcome. By creating "pull"—rather than simply pushing their agenda—they get greater and more-aligned participation and build trust so that people don't feel the need to seek excessive input or approval.

Ellen, for example, decided to engage stakeholders in collaborative work early to save time later in the process. "I used to dot every i and cross every t before approaching others," she says. "But I've learned that if I get a plan partially developed and then bring in my team, my boss, even my clients, they get invested and help me spot flaws, and I avoid tons of downstream work to fix things or convince people." Another leader we know schedules one-on-ones with direct reports to discuss priorities, values, and personal aspirations, enhancing their ability to work together efficiently as a team in the future. "There are so many ways people can misinterpret actions and then cause a lot of churn later," he says. "If I spend the time to give them a sense of where I'm coming from, it saves all sorts of time in unnecessary collaborations."

THE RECENT EXPLOSION in the volume and diversity of collaborative demands is a reality that's here to stay. Unfortunately, the invisible nature of these demands means that few organizations are managing collaborative activity strategically. So it falls to you, the individual, to fight overload and reclaim your collaborative time.

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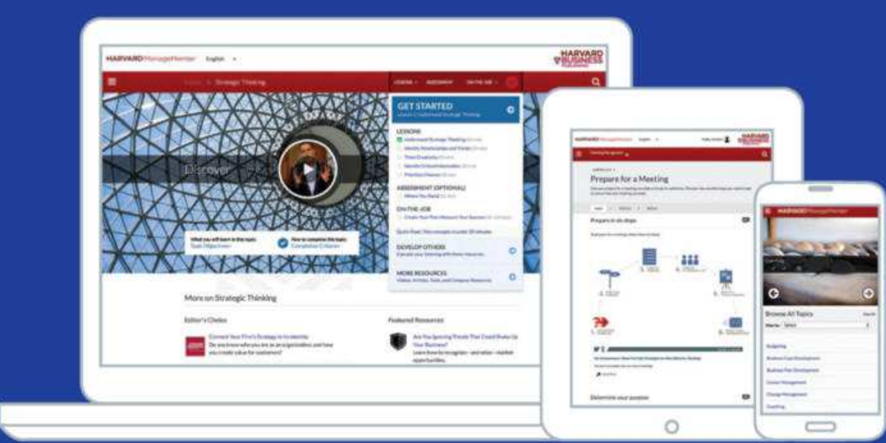

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FROM NICHE TO MAINSTREAM

CAN A JAPANESE RICE CRACKER COMPANY MOVE FROM THE ASIAN SECTION TO THE SNACK FOOD AISLE? BY ELIE OFEK

“Cheetos! Let’s get Cheetos!” Riku Nakamura’s daughter, Akari, lunged toward the grocery store shelf.

CASE STUDY CLASSROOM NOTES
Consumer packaged goods companies seeking international growth have several options: create a foreign subsidiary to sell the original product abroad; establish a new brand for the new market; acquire a local brand; partner with another brand for distribution and marketing; and produce for a local company under its brand (in an original equipment manufacturer or private label deal).

Riku’s wife, Aoi, sighed. “Remind me: Why are we walking down this aisle again?”

“I wanted to see how chips and crackers are displayed. I don’t understand why our crackers can’t be in this section, too.”

Aoi nodded at the Cheetos bag Akari was now clutching to her chest. “Maybe you need to add fluorescent cheese dust?”

Riku chuckled, but her joke didn’t lift his mood. He was feeling increasingly anxious about work.

Six years earlier, he had been asked to relocate from Tokyo to San Mateo, California, to spearhead the launch of Kenko USA, the first foreign subsidiary of his employer, Kenko. The largest producer of rice crackers in Japan, the company had $1 billion in domestic sales and hoped to kick-start growth and globalization plans. It wanted to become the next Kikkoman, which had so successfully turned Americans on to its soy sauce and stir fry products. Riku and Aoi had both been excited about the opportunity. Pregnant with Akari, Aoi had liked the idea of being a stay-at-home mom for a while and had agreed to put her teaching career in Japan on hold so that Riku could take the promotion.

However, their planned U.S. stint had turned into a stretch—because Kenko USA hadn’t taken off as hoped. Sure, the business was chugging along, with sales increasing by a modest 2% per year. But growth was well below projections, and the division, which was supposed to be self-sustaining after five years, was still losing money. Riku knew that the key was to expand beyond Asian supermarkets and grocery stores’ international sections and get Kenko crackers into the snack aisles of mainstream U.S. food outlets, but his team’s efforts had yet to bear fruit.

ELIE OFEK is a professor at Harvard Business School. He teaches the case on which this one is based in his executive education classes.

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 “Kameda Seika: Cracking the US Market” (case no. 517095-PDF-ENG), by Elie Ofek, Nobuo Sato, and Akiko Kanno, which is available at **HBR.org**.

Recently, Kenko USA had been approached by Patty's Pantry, a national discount grocery chain, about a deal to produce a private label line: Kenko's crackers with Patty's branding. Rebecca Bairstow, Riku's number two, was advocating strongly for the partnership. She believed it would help American consumers see Japanese rice crackers as a healthful, gluten-free snack choice and would provide the distribution bump the division needed to grow sales and become profitable. But Riku worried that it would be only a short-term fix and would fail to establish the Kenko brand in the United States.

Riku's mentor at headquarters, Fusao Saito, was pushing more direct-to-consumer outreach. This would take more money and time, but with Fusao's endorsement, Riku suspected the company would give him that shot.

But he also had his family to consider. Aoi had been asked to pick up classes at the university again. Both of them were getting homesick. And the older their daughter got, the more they realized that they wanted her to grow up Japanese, not American.

Riku had assumed that Kenko USA would be a true success before he turned it over to someone else and returned to headquarters. Now he wasn't so sure.

"Papa? Cheetos?" Akari asked.

"Let's find Papa's crackers first," Aoi said, extracting the bag from her daughter's grip.

When they arrived in the World Foods aisle, Akari strode up to the Kenko shelves and reached for her favorite sweet flavor—*mizuame*, in the pale yellow package.

Riku and Aoi laughed. "We have plenty at home," Riku said. "We just wanted to find them on the shelves."

Akari furrowed her brow until Riku winked at her. "Don't worry. I saw some Cheetos at the checkout."

PUSHBACK

"It comes down to demand," said Dave Knight, chief snack buyer for Clementine's, a major West Coast grocery chain. Riku and Rebecca had secured a coveted face-to-face meeting with him at the company's headquarters. "We need to see more people buying your products before we can give you more space. We can't squeeze our top brands from Frito-Lay for something that isn't a proven seller."

"Of course we understand your position," Riku said. "But we're not asking for more space, just different space. Why shouldn't rice crackers sit with other popular snacks?"

"Because the packaging, the flavors, the brand message are Japanese. We think that's great, and there's a niche market for your product—in the Asian section. You'll confuse people if Kenko is in both places."

"But you have salsa in snacks and in the Mexican section," Rebecca said.

"Salsa is different—it's American too now!" Dave gave a hearty laugh.

"I think you're missing an opportunity," Riku replied. "More and more people are eating gluten-free and avoiding fried food. Consumers want different snack options, and Kenko can be one of them. But you're hiding us in the World Foods aisle."

Rebecca jumped in. "What about experimenting in a few stores? Put us with rice cakes in one, with crackers in another, with gluten-free in another, and see which sells best?"

Dave laughed again. "Honestly, I would if I could. But if I ran experiments for you, I'd have to do it for every other new brand. My store managers and stockers would kill me. And my biggest suppliers would ask why I'm giving even a bit of their space to an upstart that hasn't proven itself. It's just not realistic."

Riku glanced ruefully at Rebecca.

"You have to demonstrate demand," Dave continued. "Maybe work with stores to do more sampling—say, every weekend for a month or two? You could also start a coupon program."

"How can we persuade you to try us in snacks now?" Rebecca asked.

"Well, there's always the option of paying a higher slotting fee. Bumping it from 30 cents per pack to 50? Then I could make a case to my boss."

Riku wondered whether paying retailers more for a certain period would make sense. But such a move would cut into already-low margins and exacerbate profit losses, so he knew his superiors would most likely disapprove.

According to research from Nielsen, deals in which manufacturers produce goods for another brand are most successful—in terms of increased sales and market share—in commodity-driven, high-purchase categories.

Should Riku's personal life factor into his decision about which strategy to pursue?

Snack food names and packaging can have a significant impact on sales. For example, Angie's Kettle Corn changed its name to Boomchickapop and redesigned its bags in 2012. *Specialty Food* magazine reports that sales grew 12-fold over the following four years.

Frito-Lay dominates the savory snacks category in the U.S., according to data from IRI, a Chicago-based market research firm. The company has a 60% market share in potato chips (Ruffles), a 72% share in tortilla chips (Doritos and Tostitos), an 87% share in cheese snacks (Cheetos), and a 62% share in other salted snacks.

Data from Statista shows that food allergies and intolerances are driving demand for gluten-free foods, particularly in the United States. A $2.6 billion category in 2015, it is expected to grow to $7.6 billion by 2020.

According to information gathered by Mintel GNPD (which is used by the United States Department of Agriculture), 21,435 new food and beverage products were introduced in the U.S. in 2016, with 14.8% of those in the snack category.

A slotting fee is a sum paid by a vendor or manufacturer to a retail establishment for warehousing a product, displaying it on store shelves, entering the product data into an inventory system, and programming its computers to recognize the product's bar code. In the U.S., slotting fees often run $50,000 a year or more, per product per store.

What customer segment would be the most promising for Kenko's rice crackers?

Is Rebecca right in her assumption that Kenko can use a private label to its advantage? What are the potential downsides to pursuing the deal?

"Our data shows that the demand is there," he said. He hoped he sounded more confident than he felt.

TIME TO DEBRIEF

Before heading to the office, Rebecca and Riku stopped at Starbucks to get a bite to eat and debrief.

"Well, that was rough," Riku said, downing his Americano.

"I think we need to get serious about the private label deal," Rebecca said, sipping a green tea. "Just look around you." She gestured to the food on display. "So much of this is made by other companies for Starbucks. Patty's Pantry has huge reach, and the company is ready to place a $4.5 million order with us. We'd have to cut our per-pack wholesale price, but we'd avoid sampling, slotting fees, and advertising. Think of the cost savings. We'd be out of the red in nine months."

"But no one would know the products were Kenko."

"Well, no. It would be their brand, their packaging, their flavors. Patty's is keen to try barbecue and Cajun—flavors that can help us adapt to U.S. tastes."

"What's wrong with wasabi?" Riku fired back. Americans already loved so many Japanese products. Surely Kenko could sell them on its own recipes.

"Dave wants to see demand. We can do that with the Patty's deal. Down the road, we can focus on our own brand."

"But at that point Kenko wouldn't be special. Patty's crackers would have the same quality. And how would we explain that to our current partners?"

"We're talking about different customer bases. And if we show strong sales momentum, we can lobby headquarters for manufacturing in the U.S. We'd have lower COGS, better margins. For me it's a no-brainer."

A RECOMMENDATION

Back at home that night, Riku sat in front of his computer screen, looking at his colleagues sitting around a conference room table. It was morning in Tokyo, and he was checking in with the executive team at headquarters.

"Unfortunately, we haven't seen a major uptick in growth," Riku told the group. "We're holding steady at 2% year-on-year, with annual revenue of about $5 million." He felt like a broken record. "But Rebecca and I have been discussing several new ideas."

Kenko's CEO, Yuki Kato, nodded. "I do think it's time for new ideas, Riku. Other Japanese imports are doing so well in America. People should want Kenko in their pantry too."

"Funny that you use the word 'pantry,' Kato-san," Riku said. "I've mentioned Patty's Pantry before. It's a fast-growing chain that provides high-quality food at low prices. They have offered us a private label deal that could quickly make us profitable."

Some of his colleagues seemed to perk up, but others, including the CEO, looked disappointed. "I know that establishing Kenko USA is a big part of our globalization strategy," Riku said. "But perhaps we can bring the cracker first, then the brand."

Fusao Saito spoke up. "And what are the other ideas?"

"As we've discussed, Saito-san, we could ramp up our grassroots marketing," Riku said. "Sabra, the hummus brand, did extensive sampling, not just at grocery stores but also at parks and events. They also tweaked their packaging to be more appealing. Those efforts helped them break into the deli sections of mainstream retailers, and they've been going strong ever since. Direct-to-consumer promotions could complement our grassroots efforts."

"If we were to implement such a program," Kato said, "what would be the budget and time frame?"

"I would estimate $3.5 million and two years."

"And do you feel you could lead that initiative yourself?"

Riku instinctively bristled. Had they lost faith in his ability to make Kenko USA successful?

"That is your decision, Kato-san, but I am confident that our team here could execute on either strategy."

"Thank you, Riku. We'll discuss these options, but I'd like a formal recommendation from you."

"Of course. I'll talk to my team and give you one by next week." After the goodbyes, Riku shut off his computer and walked to the bedroom. Aoi was still up. "Did I hear two more years?" she said. "Honestly, Riku, I really don't want us to stay here that long."

U.S. imports of agricultural products from Japan totaled $641 million in 2016, data from the Office of the U.S. Trade Representative shows. Leading categories include snack foods ($65 million), wine and beer ($62 million), tea ($46 million), vegetable oils ($43 million), and processed fruit and vegetables ($32 million).

Does Riku need more help than he realizes?

SEE COMMENTARIES ON THE NEXT PAGE

SHOULD RIKU RECOMMEND THE PRIVATE LABEL DEAL OR THE BRANDED MARKETING PUSH TO HIS EXECUTIVE TEAM? THE EXPERTS RESPOND

IF KENKO'S GOAL is to become a successful national brand in the United States, I would advise Riku to rethink and expand the division's marketing efforts instead of pursuing the private label deal.

At Kameda—which, like the fictional Kenko, is a leading cracker company in Japan working to expand abroad—we have experience with both approaches to brand building. In 1989, we invested in the U.S. market with an ownership stake in Sesmark Foods (now TH Foods), a private label manufacturer that sells specialty crackers and snack mix components to industry giants like Nabisco. The business model is a profitable one, but over the past five years, we've seen TH Foods struggle to launch its own branded products.

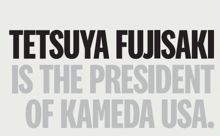
In 2008, we created Kameda USA with the intention of bringing the Kameda brand to the American market, and the Kenko story is loosely based on our own experiences. We currently sell two of our own lines in the United States: our traditional rice crackers (Kameda Crisps) and a sweet, frosted version (Kameda Frost), but we, like Kenko, have had some difficulty getting retailers to understand this new category of consumer packaged goods and where it should be displayed in stores. Shoppers, too, have needed an introduction to our crackers.

One successful strategy we implemented was to sell Kameda Frost in the checkout lines of TJ Maxx—a nontraditional food store, but one with a mainstream following—alongside other new and trendy impulse-buy snacks. We have also successfully pushed to have this product introduced as a new option in the "rice cake" section of grocery stores. With Kameda Crisps, we've experimented with new packaging and various retail placement: Asian, snacks, even nuts. The key is to help grocery store executives and customers better understand when and how to eat our crackers. At the same time, we are committed to maintaining our Japanese identity. To compete with other U.S. snacks, we know we can't be too foreign. But we also believe our authenticity is a big differentiator. In the coming years, Kameda plans to ramp up our branded market efforts, including pushing more customer tastings. We believe that the combination of taste and healthfulness we offer can be as competitive in the United States as it is in Japan. But we know that even achieving a position of number three or four in our subsegment will take a long time. It didn't happen overnight for Kikkoman, and it won't for us.

One additional strategy that Kenko might consider is an acquisition. In 2013, Kameda USA took a majority stake in Mary's Gone Crackers, a California-based maker of organic gluten-free snacks. That company has never considered a private label deal, preferring to keep its well-regarded recipes under its own brand and to preserve its advantage as a first mover in a category that is now embraced not just by those on special diets but also by mainstream consumers. The Mary's Gone Crackers acquisition helped us get a foothold in and learn about the branded market in the United States, which should help us as we work to build our own brand in this important market.

IT DIDN'T HAPPEN OVERNIGHT FOR KIKKOMAN, AND IT WON'T FOR US.

In this case, Riku seems to be losing patience. But he should separate his personal decisions from his professional ones. In my experience, Japanese companies rarely expect expatriate assignments to carry on indefinitely. They understand that executives, particularly those with children, will want to come home. So Riku should feel comfortable recommending the right course of action for the business—continuing to push the Kameda brand in the U.S.—even if it means that a successor might spearhead the effort.



TETSUYA FUJISAKI IS THE PRESIDENT OF KAMEDA USA.

CARLOS CANALS IS THE CEO OF CIAO BELLA.

ANYONE WITH A branding background will be skeptical of private label deals. But in this case I would encourage Riku to consider the partnership with Patty's Pantry, for a few reasons.

First, this retailer seems like a Trader Joe's equivalent, which means that most of its offerings are private label, with little to no branded competition. I wouldn't advise Kenko to sign a similar deal with a traditional grocery chain such as Safeway or Albertsons, because doing so would effectively create cut-price competition for its own brand in those stores. But the arrangement with Patty's avoids this risk while giving Kenko access to the chain's fast-growing and influential business.

The deal offers several attractive benefits: It would give Riku a chance to learn from experts in the American snack foods industry about how to position his product for the mainstream. It would put Japanese rice crackers in front of a wide swath of U.S. consumers—and because 80% of Americans shop at multiple grocery chains, increasing familiarity with one retailer should help Kenko's sales in other outlets, too. The partnership would also allow Riku to prove that his product can be sold alongside other types of snacks—generating data he can share with mainstream store buyers—while staying under the radar of the

THE DEAL WOULD CREATE A STEADY REVENUE STREAM FOR THE U.S. DIVISION.

big consumer packaged goods brands that tend to copycat any successful creators of new categories. Finally, the deal would quickly create a steady revenue stream for the U.S. division: Riku could be shipping product within six months and would have a sense of the sales trends within a year and a half. The influx of cash would not only make those late-night calls with the executive team in Tokyo much easier but would also allow Riku to more easily ramp up his branded marketing efforts when the time is right.

At Ciao Bella, we have a well-established brand as the first purveyor of traditional Italian gelato in the United States. We don't own our manufacturing, so a private label deal doesn't make sense for us. But in a previous role, when I was leading the hummus brand Tribe, we followed the same path I'm recommending to Riku. At the time, Sabra was winning our category. We rejected offers from several grocery chains that wanted us to create a product for them, but we said yes to Trader Joe's because it gave us a chance to leverage our existing manufacturing capacity (as Kenko could with its factories in Japan) and generate steady revenue as we mapped out our branded strategy.

Kenko USA's offer from Patty's Pantry would allow the division to quietly establish the success case for its rice cracker product, which it could then replicate under its own brand name in other retail environments.

For Riku, the deal might also allow him and his family to return to Japan sooner, having pulled the U.S. division out of the red. As a Mexican who has lived and worked across South America and in the United States for the past 20 years, I certainly understand the desire to return home. But I wouldn't advise Riku to cut the deal and run. He should get actively engaged in the development of product and packaging with Patty's Pantry, oversee the launch, and keep a close eye on early results before he hands the business over to another executive. That's the best way for him to position Kenko's brand for a successful future in the U.S. market.

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COMMENTS FROM THE HBR.ORG COMMUNITY

A Dual Strategy
Riku shouldn't put all his eggs into one basket. He can pursue a dual strategy, using the private label deal to achieve the short-term objectives of profitability and survival while planning a longer-term marketing push for the Kenko brand. This would also allow him to return home sooner.
Alson Ang, business owner, VZN, SIngapore

No Deal
Kenko USA should redesign its packaging to highlight the crackers' healthful qualities and get products into the hands of consumers—in single-serve bags—at health-oriented events and in restaurants. A private label deal would erode margins and complicate expansion of branded products, hurting Kenko in the long term. If Riku doesn't want to oversee this campaign himself, he should turn it over to another manager.
Angie Shultz, sales, Donaldson Company

Focus on Messaging
Explore new packaging and positioning that highlight the most relevant job to be done ("Satiate my hunger without guilt or gluten") and the secondary emotional and social jobs ("Reinforce my sense of worldliness every day").
Chris Reynolds, brand manager, Kimberly-Clark

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Intelligent Automation:

A Big Win for Tax Departments

Corporate tax departments face an array of internal and external challenges, from disruptive technologies to a complex new overhaul of the U.S. tax code. Intelligent automation can help them power through these challenges and deliver new value for their organizations.

By Steve Rainey & Brad Brown

Chief Innovation Officer and Leader for Data & Analytics,Tax, KPMG LLP

Chief Innovation Officer and Technology Leader for Tax, KPMG LLP

For today's corporate tax professionals, the challenges now seem to come without letup. Political developments that threaten trade and tax regimes. Mandates from executive management to do more with less. The gig work trend. A wide range of new technologies upending how businesses compete in almost every facet of their operations. And now, in the U.S., a dramatic realignment of the federal tax code that lowers the corporate income tax rate while eliminating some long-tenured deductions—regulatory details to follow.

If ever there was a time for corporations to rethink how the tax function is organized and managed, this may be it. The good news? Many of the same disruptive technologies that are turning business on its head can help tax departments pivot to meet their own challenges, from operating more efficiently to enhancing their company's global tax profile.

Specifically, tax departments today have an opportunity to leverage big data and artificial intelligence applications like machine learning to infuse their operations with intelligent automation—from handing over repetitive and mundane activities to software "robots" to bringing new speed and accuracy to high-value undertakings like complex, labor-intensive tax planning activities.

The potential applications are numerous, but consider by way of example the challenges corporations face in the U.S. in taking advantage of the federal research and development tax credit, once expected to expire but ultimately preserved in last year's Tax Reform and Jobs Act. Although the credit is exceedingly valuable—the U.S. Treasury estimates its value at $163 billion for fiscal years 2018-2027—securing it can be a laborious process as tax departments struggle to provide the Internal Revenue Service with sufficient evidence of qualifying activities. This credit computation and filing process typically requires R&D personnel to respond to sometimes numerous entreaties for supporting documentation—contracts, e-mails, slide decks, and more—impinging on their core mission of inventing new technologies and products.

> *"Intelligent automation can help tax professionals deliver new value for their organizations."*

Today there's an alternative—a new service designed to streamline the R&D tax credit claim process. KPMG Research Credit Services with Watson melds the specialized knowledge of the firm's tax credit professionals with artificial intelligence capabilities from IBM. This new service automates much of the qualitative analysis required to support an R&D tax credit claim by uploading and reviewing the relevant structured and unstructured data and then comparing what it finds against tax rules. The end result is more thorough and higher-quality documentation for the IRS, along with lighter demands on the client's internal tax and R&D professionals.

Using intelligent automation this way is a dramatically new approach to problem-solving for tax departments, which in the past have had to muscle their way through such challenges by adding staff. It's also just one example of the way we're taking advantage of intelligent automation at KPMG, both internally to improve our own processes and services and externally to help our clients sharpen theirs. And, we're doing it not just in tax but across a wide spectrum of business activities, including sales, marketing, human resources, finance and accounting, and operations.

Tax departments today are endlessly challenged by shifting laws, regulations, and court cases across multiple jurisdictions. By embracing intelligent automation, they can better meet those challenges and play a bigger role in their companies' success.

To learn how your organization can take advantage of intelligent automation, please visit KPMG.com/us/taxinnovation.

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MIKE STEIB

CEO OF XO GROUP AND AUTHOR OF *THE CAREER MANIFESTO*

WHAT I'M READING...

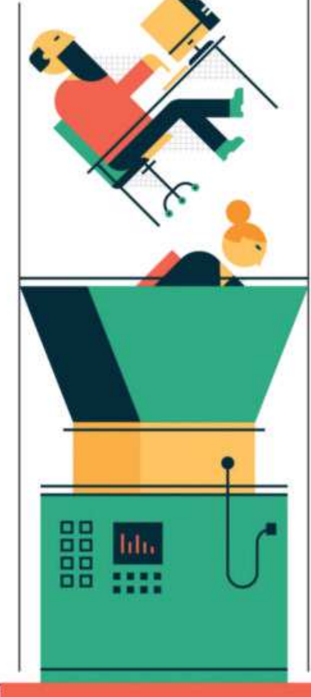
I try to read 20 books a year, or about 45 minutes a day. I mostly gravitate toward human psychology, performance, productivity, and philosophy. Recently I've read Jonathan Haidt's *The Happiness Hypothesis,* Emerson's "Self-Reliance," and Mike Maslansky's *The Language of Trust*. Politics is another interest, and I just finished *Devil's Bargain,* by Joshua Green, about Trump and Bannon—know thy enemy. I also love science fiction, because it forces you to think bigger and imagine the future in fantastic ways. The Remembrance of Earth's Past trilogy, by Cixin Liu, is absolutely brilliant.

SYNTHESIS

ARE THERE GOOD JOBS IN THE GIG ECONOMY?

BY NICOLE TORRES

There's no denying the growth of the gig economy. Economists estimate that the portion of U.S. workers earning a living as independent contractors, freelancers, temps, and on-call employees jumped from 10% in 2005 to nearly 16% in 2015, and the trend shows little sign of slowing. Advocates of these "alternative work arrangements"—many of which are enabled by sharing or on-demand apps such as Uber and TaskRabbit—bill them as a way to trade unemployment, burnout, or hating one's job for freedom, flexibility, and financial gains. Skeptics, meanwhile, point to the costly trade-offs: unstable earnings, few or no benefits, reduced job security, and stalled career advancement.

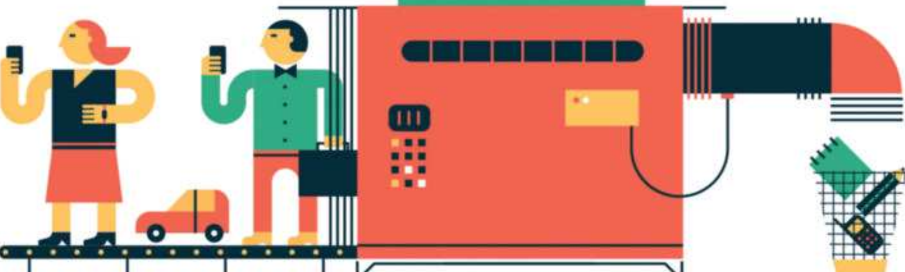


But what do the gig workers themselves say? *Gigged,* a new book by Sarah Kessler, an editor at Quartz, focuses on their perspective. In profiling a variety of people in contingent jobs—from a 28-year-old waiter and Uber driver in Kansas City, to a 24-year-old programmer who quit his New York office job to join Gigster, to a 30-something mother in Canada who is earning money through Mechanical Turk—Kessler illuminates a great divide: For people with desirable skills, the gig economy often permits a more engaging, entrepreneurial lifestyle; but for the unskilled who turn to such work out of necessity, it's merely "the best of bad options."

Financial insecurity is a big and ever-present concern. So is the lack of human connection: When you're managed by an algorithm that sends notifications to your phone, it becomes harder to build relationships with bosses or even fellow employees—relationships that can help you advocate for better working conditions. Kessler writes, "I don't think Silicon Valley was wrong to attempt to restructure the job. Our current model wasn't working, and the startup spirit of experimentation was necessary. But attempting to tackle the problems of the job...without fixing the support structures around it can't quite count as progress, and it certainly doesn't look like innovation."

That tension is also a central theme of *Temp,* a forthcoming book that explains our new world of work. Author Louis Hyman, a Cornell professor and economic historian, notes that in America traditional organizations began moving away from offers of full-time employment and toward more-flexible short-term staffing jobs as a result of both new management ideas (such as the Lean Revolution) and changing values (such as prioritizing short-term profits). This restructuring of the workforce was facilitated, he emphasizes, by management consultants, who believed that "the long hours, the tensions, the uncertainty were all a perfectly reasonable way to work," and by temp agencies, which created pools of standby, on-demand labor. By the 1980s temps were providing not emergency help but cyclical replacement.

Hyman's stats are striking: By 1988 about nine-tenths of businesses were using temp labor; since 1991 every economic downturn has meant a permanent



WHO I'M FOLLOWING...

I use Twitter daily, following about 800 people and outlets and intentionally balancing left- and right-leaning news and opinions: the *New York Times*, the *Washington Post*, Breitbart, *National Review*. Especially after Donald Trump's election, it's important to understand different viewpoints in this country and find sources that aren't just algorithmically driven.

"NONFICTION GIVES YOU FOUNDATIONAL KNOWLEDGE. FICTION CHANGES YOUR PERSPECTIVE."

WHAT I'M WATCHING...

I watch only about an hour of TV a week—something my wife and I can enjoy together. I love *Game of Thrones*, and we're now watching *Stranger Things*. I have two kids, so every movie I see is animated: *Zootopia*, *Lego Batman*, *Inside Out*. On my own, I might turn to YouTube. I recently fell into a rabbit hole of David Foster Wallace interviews, each one enlightening. And I've found a fantastic guitar-for-amateurs channel called Marty Music. While I'm running on the treadmill, I watch the host explain how to play "Wonderwall."

loss of jobs; by 1995, 85% of companies were "outsourcing all or part of at least one business function." And, Hyman notes, most of the affected employees fall on the wrong side of the divide Kessler describes: They became temps and "gig workers" owing to events beyond their control, such as elimination of full-time positions—with their secure paychecks and perks.

Although Hyman does seem to hold out hope for this new era of employment—"The gig economy might have the best of both worlds: the autonomy and independence of an economy before wage labor, but with individuals possessed of the productive capacity of an industrial economy"—he also argues that the only sustainable path forward is to somehow reconnect temp workers to the support they once got from full-time jobs. That could come through either portable benefits (which he thinks are feasible) or a universal benefits system (which he thinks is not). "Americans need life security," he writes, "not job security."

Another new book offers a similar message but begins in a very different place. In *Bullshit Jobs*, David Graeber, a professor of anthropology at the London School of Economics, lambastes today's corporations for engaging in "ruthless downsizing... layoffs and speed-ups," which "invariably fall on that class of people who are actually making, moving, fixing, and maintaining things." Even worse: As the doers among us are pushed into tenuous, low-paid, benefit-less gig work, somehow "the number of salaried paper pushers ultimately seems to expand."

When his provocative 2013 essay "On the Phenomenon of Bullshit Jobs" went viral, hundreds of people around the world contacted Graeber to confess that their office jobs were indeed pointless. He says that John Maynard Keynes's prediction that we'd all eventually be working 15-hour weeks should by now have come true; but rather than allowing for leisure, automation produced a huge number of people who support themselves (and even become wealthy) in "dummy jobs" while others do real work on a temp or gig basis and struggle to make ends meet.

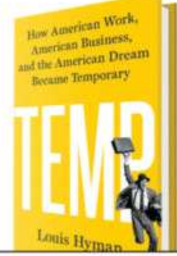
Why is it that the jobs that most obviously benefit society (janitor; bus, truck, or train driver; farm or factory laborer; teacher) are those that pay the least and in many cases offer the least security? (Doctor is an exception.) Imagine the chaos that would follow if all the garbage collectors and nurses disappeared. We probably wouldn't miss telemarketers or corporate executives quite as much. Graeber ends by advocating for a universal basic income that would detach work from the compensation we all need to live and free us up to take on the jobs and pursuits that really matter—whether they're gigs or full-time.

Both his and Hyman's suggestions make sense, but their practicality remains in question. For a more workable solution we can turn back to Kessler. One of the most interesting stories in *Gigged* is about not a person but a company: an office-cleaning and handyman start-up called Managed by Q, which in 2014 changed its business model to start bringing previously independent contractors on staff. By 2017 it had become profitable, and executives attributed much of that success to the treatment of employees as a competitive strength rather than a cost to be minimized. In the absence of policy change, perhaps we need more organizations to step up in the same way and prove that the gig economy can also be a humane one.

"FOR DECADES, IN EVER MORE INSIDIOUS WAYS, EMPLOYERS HAVE FOUND WAYS TO MAKE WORKERS DISPOSABLE."
Louis Hyman, *Temp*

NICOLE TORRES is an associate editor at *Harvard Business Review*.

Gigged: The End of the Job and the Future of Work
Sarah Kessler
St. Martin's Press, 2018



Temp: How American Work, American Business, and the American Dream Became Temporary
Louis Hyman
Viking, 2018

Bullshit Jobs: A Theory
David Graeber
Simon & Schuster, 2018

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EXECUTIVE SUMMARIES JULY–AUGUST 2018

SPOTLIGHT

THE LEADER'S CALENDAR

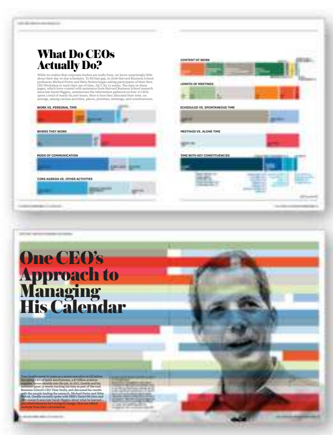
Chief executives have tremendous resources at their disposal, but they face an acute scarcity in one critical area: *time*. Drawing on an in-depth 12-year study, this package examines the unique time management challenges of CEOs and the best strategies for conquering them.

page 41

THE COMPLETE SPOTLIGHT PACKAGE IS AVAILABLE IN A SINGLE REPRINT. **HBR Reprint** R1804B

HOW CEOs MANAGE TIME

In 2006, Harvard Business School's Michael E. Porter and Nitin Nohria launched a study tracking how large companies' CEOs spent their time, 24/7, for 13 weeks: where they were, with whom, what they did, and what they were focusing on. To date Porter and Nohria have gathered 60,000 hours' worth of data on 27 executives, interviewing them—and hundreds of other CEOs—about their schedules. This article presents the findings, offering insights not only into best time-management practices but into the CEO's role itself. CEOs need to learn to simultaneously manage the seemingly contradictory dualities of the job: integrating direct decision making with indirect levers like strategy and culture, balancing internal and external constituencies, proactively pursuing an agenda while reacting to unfolding events, exercising leverage while being mindful of constraints, focusing on the tangible impact of actions while recognizing their symbolic significance, and combining formal power with legitimacy.



WHAT DO CEOs ACTUALLY DO?

A look at the data on how CEOs allocated their time among various activities, places, priorities, and constituencies

ONE CEO'S APPROACH TO MANAGING HIS CALENDAR

In an interview, Tom Gentile, the CEO of the $7 billion aviation supplier Spirit AeroSystems, shares what he learned from tracking his time in Porter and Nohria's study—and what he's trying to change as a result.

HOW I DID IT

STRATEGY

THE CEO OF LEVI STRAUSS ON LEADING AN ICONIC BRAND BACK TO GROWTH

Chip Bergh | page 33

When the author was tapped to join Levi Strauss, in 2011, the company's financial performance had been erratic for a decade. He went on a listening tour, conversing with each of the top 60 executives, asking them what three things absolutely must change and what three things must not. He wasn't surprised to discover that a clear strategy was lacking. But he also saw that a lack of urgency, of financial discipline, and of data discipline permeated the culture.

After six months on the job, Bergh and his team rolled out a plan consisting of four key pieces: (1) Build our profitable core (80% of profits come from men's jeans and Dockers); (2) Expand for more (seize the opportunity in women's clothing); (3) Become a leading omnichannel retailer (grow sales in the company's own stores and online); (4) Achieve operational excellence (cut costs, drive cash flow, become more data driven and financially disciplined).

The new strategy provided funds for investment in the company's Eureka Innovation Lab, which had been colocated with a factory in Turkey. In 2013 a new facility was opened four blocks from headquarters in San Francisco. Its biggest success has been a revamped women's denim line. A second big investment was the purchase of naming rights for the San Francisco 49ers' new stadium—a 20-year, $220 million deal. Bergh saw that as an opportunity to put the Levi's brand back at the center of the cultural conversation.

HBR Reprint R1804A

MANAGING YOURSELF

COLLABORATION WITHOUT BURNOUT

Rob Cross, Scott Taylor, and Deb Zehner | page 134

As organizations become more global, matrixed, and complex, they are requiring employees to collaborate with more internal colleagues and external contacts than ever before. According to research, most managers now spend 85% or more of their work time on e-mail, in meetings, and on the phone. And although greater collaboration has benefits, it also leaves significantly less time for focused individual work, careful reflection, and sound decision making.

Organizational solutions are, of course, necessary to eradicate collaborative overload across the board. But research shows that with some strategic self-management, individuals can also tackle the problem on their own, clawing back 18% to 24% of their collaborative time.

The first step is to understand why you take on too much work for and with others; this often involves challenging your identity as a "helper," a "team player," or a "star performer." Next, figure out how you add—and from where you derive—the most value and eliminate any collaborations that distract from that work. Last, ensure that the collaboration you continue with is as productive as possible.

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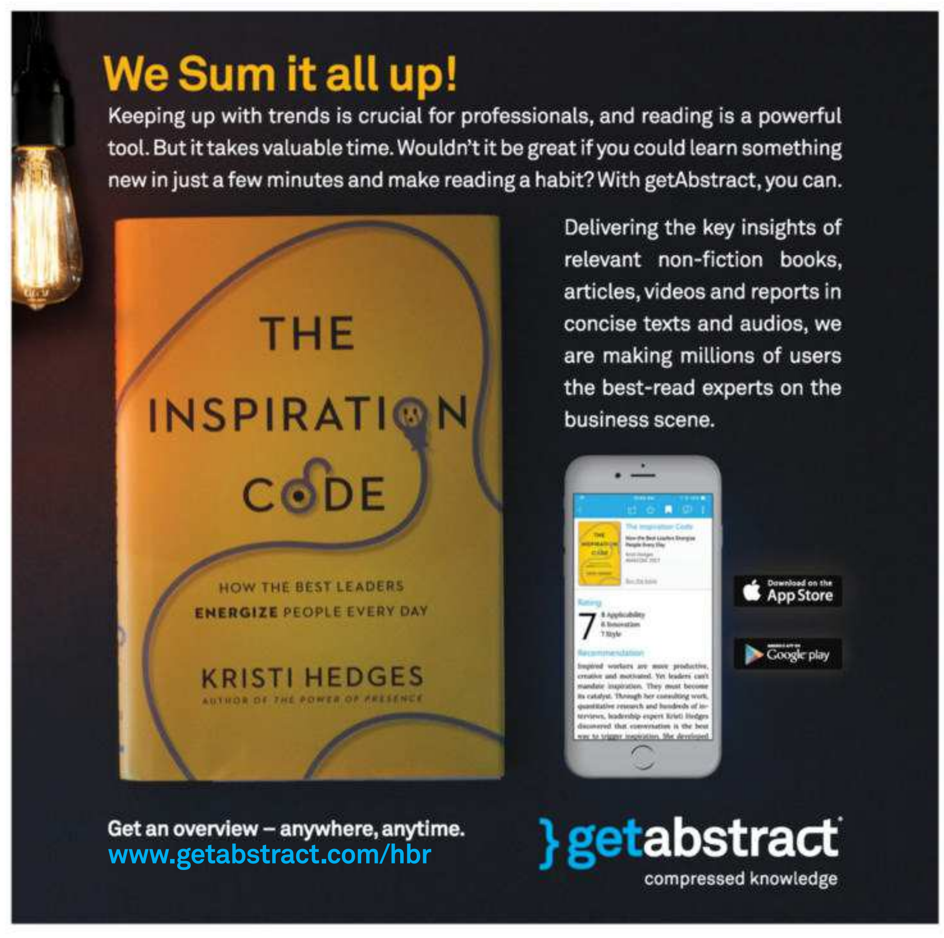

FEATURES

MANAGING PEOPLE

DO YOUR EMPLOYEES FEEL RESPECTED?

Kristie Rogers | page 62

When you ask workers what matters to them, respect from superiors often tops the list. Yet employees report more disrespectful and uncivil behavior each year. This disconnect happens in large part because leaders have an incomplete understanding of what constitutes workplace respect—and so even well-meaning efforts to provide it often fall short.

The author's research shows that employees value two distinct types of respect. *Owed respect* is accorded equally to all members of a work group or organization. It's signaled by civility and an atmosphere suggesting that every member is inherently valuable. *Earned respect* recognizes individual employees who display valued qualities or behaviors.

To better understand the two types of respect, the author spent 15 months studying a unique work program for female prison inmates—a context that sharply highlights the differences between a respectful environment and a disrespectful one. At Televerde, a B2B marketing firm, regular displays of owed and earned respect have created an extraordinarily engaged workforce responsible for impressive profitability and growth, and recidivism among Televerde's inmate employees is 80% lower than the national average.

Although Televerde operates in an unusual context, its employees' need for respect is universal. The author details seven ways in which leaders and managers can convey owed and earned respect and thus build a workplace that allows employees—and, as a result, their companies—to become the best possible versions of themselves.

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DIVERSITY

THE OTHER DIVERSITY DIVIDEND

Paul Gompers and Silpa Kovvali
page 72

Researchers have struggled to establish a causal relationship between diversity and financial performance—especially at large companies, where decision rights and incentives can be murky, and the effects of any given choice can be tough to pin down. So the authors chose a "lab rat" with fewer barriers to understanding: the venture capital industry.

VC firms are fairly flat: Every investor is a decision maker, and choices have clear business consequences. Using publicly available information, researchers can see how similar or different decision makers are and compare decision quality on the basis of investments' performance.

THE GENDER AND RACIAL MAKEUP OF THE VC INDUSTRY IS STAGGERINGLY HOMOGENEOUS.

After examining tens of thousands of VC investments, Gompers has found that diversity significantly improves financial performance on measures such as profitable investments at the individual portfolio-company level and overall fund returns. And even though associating with similar people can have social benefits, it can lead investors and firms to leave a lot of money on the table.

In this article Gompers and Kovvali describe the research and provide recommendations for reaping the business benefits of diversity.

HBR Reprint R1804D

ORGANIZATIONAL CULTURE

CREATING A PURPOSE-DRIVEN ORGANIZATION

Robert E. Quinn and Anjan V. Thakor | page 78

When employees are disengaged and underperforming, the reaction of many managers is to try new incentives and ratchet up oversight and control. Yet often nothing improves. Why? Because the assumption behind such conventional approaches is that work is fundamentally contractual and that employees are self-interested agents who will seek to minimize personal effort. And that assumption becomes a self-fulfilling prophecy: Employees do just what is needed to earn a reward or meet a standard, and nothing more.

But there is another way: Rally the organization behind an authentic higher purpose—an aspirational mission that explains how employees are making a difference and gives them a sense of meaning. If you do that, they will try new things, move into deep learning, and make surprising contributions. The workforce will become energized and committed, and performance will climb.

In this article, Quinn and Thakor describe how organizations like DTE Energy, KPMG, and Sandler O'Neill have dramatically increased employee engagement after discovering their higher purposes. The authors outline eight steps other companies can follow to break free of the conventional thinking about worker motivation, help a higher purpose permeate decisions throughout the company, and set off a positive chain of events.

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ENTREPRENEURSHIP

WHEN TECHNOLOGY GETS AHEAD OF SOCIETY

Tarun Khanna | page 86

New technologies can be unsettling for industry incumbents, regulators, and consumers, because norms and institutions for dealing with them don't yet exist. Interestingly, businesspeople in emerging economies face similar challenges: The rules are unclear and infrastructure is lacking. In this article, the author suggests that tech pioneers would do well to heed a lesson he's gleaned from his research in the developing world: For long-term success, companies must invest in the surrounding ecosystem.

The author presents examples of entrepreneurs who have done just that in China, Bangladesh, Africa, and Chile, benefiting the public as well as their own enterprises. He then describes how an Indian health care organization is tackling institutional voids as it expands into medical tourism in the Cayman Islands. An in-depth look at the nascent drone industry follows, with profiles of companies that are helping create the conditions for the industry's growth by amassing knowledge about best practices, influencing the development of regulations, exploring new uses for drones, developing a professional workforce, and so forth.

The argument is that when firms launching innovative products or services look beyond their self-interest and work to collectively build the institutional infrastructure, they—and society as a whole—are more likely to prosper.

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HEALTH CARE

TRANSFORMING HEALTH CARE FROM THE GROUND UP

Vijay Govindarajan and Ravi Ramamurti | page 96

The U.S. health care system needs reform, but too often experts focus on top-down solutions stemming from federal policy changes. Such efforts alone, however, cannot fix a wasteful and misdirected system.

What's needed is innovation driven by doctors, nurses, administrators, entrepreneurs, and even patients who are devising new solutions to daily challenges.

This article looks at two examples of bottom-up innovation, each involving a radical transformation of health care delivery. The University of Mississippi Medical Center created a homegrown telehealth network to increase patient access to care; Iora Health developed a new business model that doubled down on primary care to reap large savings in secondary and tertiary care.

HENDERSON KNEW THAT A STATE-FUNDED TELEHEALTH EFFORT WAS AS LIKELY AS A SNOWSTORM IN JULY.

These successful initiatives—one from an incumbent health care provider and one from a business start-up—demonstrate the potential of creative leaders to reshape the U.S. health system.

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STRATEGY

THE 3-D PRINTING PLAYBOOK

Richard A. D'Aveni | page 106

We are entering a new era in additive manufacturing, or "3-D printing." It has major implications for the adoption of the technology and for the choices of business models available to companies that take the plunge, says the author. Advances in the technology's capabilities and expansion of the available materials and the supplier ecosystem have made it possible to produce a much broader range of affordable things—from the soles of running shoes to turbine blades—and, in many cases, in much higher volumes.

As a result, 3-D printing is moving from a limited role (such as prototyping and making conventional machine tools) to a central place in manufacturing for a growing number of industries. Strategically, that means additive is becoming a full-fledged competitive weapon: It can be used to hold on to market leadership, to dethrone the dominant player, and to diversify by exploiting a printer's capability to make products for different industries. Consequently, leaders need to understand additive's capability and potential and the choices open to them in the near future. This article presents them with a playbook and explores six possible business models that have emerged.

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TECHNOLOGY

COLLABORATIVE INTELLIGENCE: HUMANS AND AI ARE JOINING FORCES

H. James Wilson and Paul R. Daugherty | page 114

Artificial intelligence is transforming all sectors of the economy, but there's no reason to fear that robots will replace all human employees. In fact, companies that automate their operations mainly to cut their workforces will see only short-term productivity gains, say the authors. Their research, involving 1,500 firms in a range of industries, shows that the biggest performance improvements come when humans and smart machines work together, enhancing each other's strengths.

People need to train AI agents, explain their outputs, and make sure they are used responsibly. AI agents, in turn, can assist people with information gathering, data crunching, routine customer service, and physical labor, thereby freeing them for higher-level tasks that require leadership, creative thinking, judgment, and other human skills.

To get the most out of AI, companies need to redesign their business processes. After deciding what needs improvement—their operational flexibility, speed, or scalability; their decision making; or their ability to personalize products and services—they can devise appropriate solutions. That will mean not only implementing AI technology but also developing employees who can work effectively at the human-machine interface.

The authors describe how a number of firms are already taking these steps and optimizing collaborative intelligence. But many more should follow their example.

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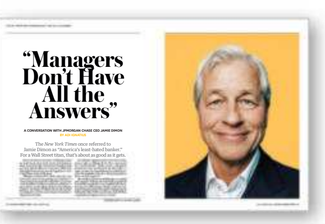
THE HBR INTERVIEW



"MANAGERS DON'T HAVE ALL THE ANSWERS"

JPMorgan Chase CEO Jamie Dimon, interviewed by Adi Ignatius | page 124

Dimon has been at the helm of JPMorgan Chase, the biggest bank in the United States, for more than 12 years. A straight-talking guy from Queens (albeit a billionaire with an MBA from Harvard Business School), he has led the bank on a steady path of growth, having weathered both the 2008 financial crisis and the "London Whale" trading scandal. Dimon calls that latter episode "the stupidest and most embarrassing situation I have ever been a part of."

In this edited conversation with HBR's editor in chief Adi Ignatius, Dimon talks about the public's view of Wall Street, post-recession regulations, the risk of cyberattacks, globalism, inequity, and the rebuilding of U.S. cities. JPMorgan has a plan to invest $150 million in Detroit by 2019 to help launch small businesses, retrain workers, and revive the property market. It has announced similar investments in underserved areas of Chicago ($40 million) and Washington, DC ($10 million).

"It's good to help society," Dimon says. "Our customers love it; our employees love it."

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Send domestic address changes, orders, and inquiries to: *Harvard Business Review,* Subscription Service, P.O. Box 37457, Boone, IA 50037. GST Registration No. 1247384345. Periodical postage paid at Boston, MA, and additional mailing offices.

Printed in the U.S.A. *Harvard Business Review* (ISSN 0017-8012; USPS 0236-520), published every other month for professional managers, is an education program of Harvard Business School, Harvard University; Nitin Nohria, dean.

Published by Harvard Business School Publishing Corporation, 60 Harvard Way, Boston, MA 02163.

LIFE'S WORK
DANIEL LIBESKIND
ARCHITECT

From the Jewish Museum in Berlin to the Ground Zero reconstruction in New York, high-profile, emotionally charged projects have made Libeskind's reputation. An academic until age 43, he now leads—with his wife, Nina—a practice of 50 employees working on commissions around the world.
Interviewed by Alison Beard

"YOU NEED PATIENCE AS A VIRTUE IN ANY JOB, BUT ESPECIALLY IN ARCHITECTURE."

HBR: **Some of your projects have taken more than a decade to complete. How do you stay motivated?**
LIBESKIND: You need to have faith, to not fall into cynicism, which is all around. People say, "This museum will never be built. You might as well give up." Or "With all these stakeholders, nothing will ever come out of it." But you've got to have tough skin and belief in what you're doing. It's not for yourself. In Germany it was for the Jewish culture that was murdered. In New York it was for the families of victims.

When collaborating with others, how do you get everyone to pull together?
You have to want to involve them and approach in a spirit of camaraderie. Forge an alliance with even one person, and that expands. Of course, there are compromises. But if you stick with it, you will succeed.

How do you decide which projects to take on?
I take any that seem interesting. I also have to look in the client's eyes and think, "This is a person I want to work with." Other than that, I have no rules. If somebody says, "Can you build a shack for $10?" I might take that just as easily as a grandiose project in the center of Paris. Because I come from a working-class background, I never thought architecture should be about inventing castles. It's about responding to people's needs.

Tell me about your creative process.
You start by immersing yourself in the site, listening to and looking at what's there but also the inaudible and less visible aspects: history, tradition. You get into a wavelength with the place. You reincarnate yourself in this new world, not as a tourist but as part of it. And then you have to be struck by an idea.

How do you manage projects from afar?
I travel—to Kenya, Poland, China, wherever. You have to commit yourself, to be present where you're building. You can't just do a sketch and send it somewhere else in the world. When you build, it should be with care. If you aren't there, it becomes careless.

What do you delegate?
I could never do what I do without my wife. I don't interview people for jobs in this office. I don't organize how it's run. I was in a meeting recently and heard the word "business." I said, "Whose business are you talking about?" And I was shocked that it was ours. How lucky am I to work with someone who can do what I can't? As for the architecture, our firm is run like a creative laboratory with very little hierarchy. I don't have an office where I disappear. I'm parked alongside my colleagues, so there's no apparent difference between a young intern and myself. It doesn't matter what your background is, how much education you have, how old you are—everyone has something to share.

You're 72. Do you ever think about retiring?
Never. Although I work very hard, I don't see it as working, because I do what I love. When that's true, you don't feel the passage of time. You're completely gripped, immersed in a flow. I have to emphasize, too, that I work with fantastic people. I look forward to seeing them. I wouldn't want to retreat and be on my own.

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