# Harvard Business Review

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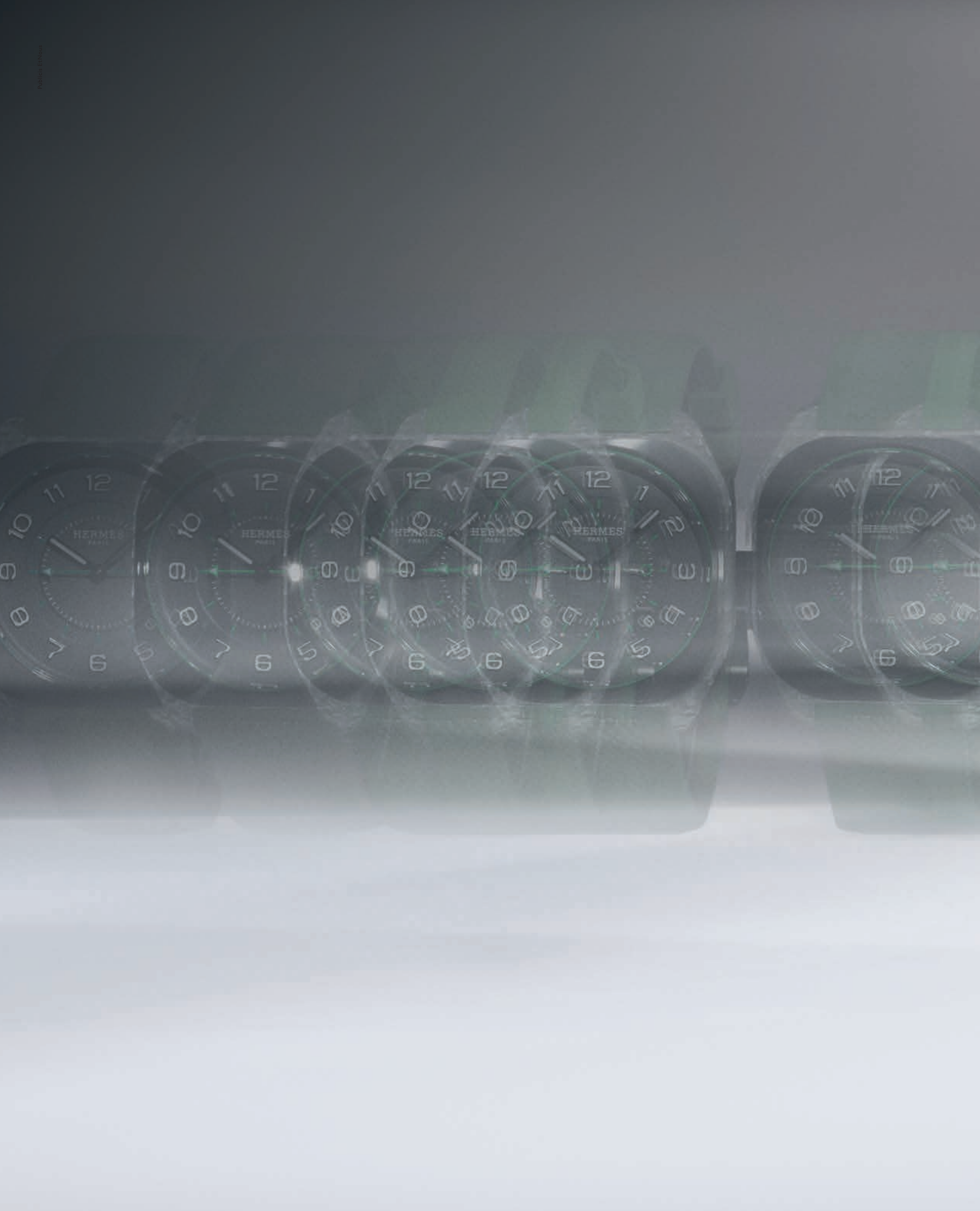
March–April 2024


## Why It's So Hard to Keep Growing

And how your organization can achieve sustained success

PAGE 37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“The right strategy for many firms may be saying no to faster growth—even if the opportunities are tempting.”

“HOW FAST SHOULD YOUR COMPANY *REALLY* GROW?,” PAGE 38

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COVER ILLUSTRATION
**Nishant Choksi**

Trunk Archive

*Photograph by* **JAMIE CHUNG**

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## 59 Features








*Illustration by* **HYPERTHALAMUSCORP**

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## Departments


"I don't have stage fright anymore. But it's always in the back of my mind as a possibility."
–RENÉE FLEMING



*Photograph by* ANDREW ECCLES/DECCA

## From the Editor

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# Should Your Company Take a Stand?

*Adi Ignatius*

**IN TUMULTUOUS TIMES CEOS** must contend with a long list of challenges to keep their businesses running profitably. Lately they've faced an additional quandary: Whether, when, and how to take a stand on vexing societal issues.

How should they navigate these choices? In the article "How Companies Should Weigh In on a Controversy," David M. Bersoff, Sandra J. Sucher, and Peter Tufano analyze global public-opinion surveys to understand what people expect from executives and organizations. The authors suggest that companies listen closely to stakeholders, be clear about which societal issues directly affect their business, and think carefully about making statements on unrelated issues—which a skeptical public increasingly sees as "virtue signaling, CEO vanity activism, and opportunism." Their data also shows that in many countries people prefer that companies avoid taking any position on partisan political matters. The authors write, "Our research clearly suggests that people don't expect organizations to weigh in on every issue—or even on every issue important in their stakeholders' lives."

Their research affirms my personal view. Companies and CEOs should speak out sparingly—but once they've done so, they should never cave, waffle, or do an about-face because their public stance upsets some group of people. If you've chosen to take a stand, then stand firm.

Thanks for reading,

**ADI IGNATIUS**
Editor in chief

Robyn Twomey

# Contributors

Morley Safer of *60 Minutes* once noted that **Ken Dychtwald** had spoken to more people about the implications of rising longevity than anyone else in history. Dychtwald, who popularized the term "eldercare," has given talks all over the world and advised presidents, government agencies, and business leaders. His mission, he says, is a bit like Paul Revere's: Ever since the 1970s, when he realized that a transformative demographic shift had begun, he's been shouting, "The aging are coming!" In this issue he and his coauthors discuss how companies and older workers alike need to think in new ways about what they can offer one another.



When **Vivian Lee** headed University of Utah Health a decade ago, it launched an on-site primary-care clinic for one of its units. The clinic helped employees manage conditions like diabetes and even offered early versions of telepsychiatry and teledermatology. Lee saw that it kept workers healthier and could "bend down the cost curve for health care expenses," she says. But over time her views shifted. A better approach now, she feels, is partnerships between retailers and health systems. In this issue she and her coauthors explain why and describe how to create those partnerships.



Former Scotland Yard detective **Scott Walker** has negotiated with kidnappers and cyberextortionists, interrogated insurgents, and run undercover operations—activities that have given him unique insight into how people think, feel, and act in times of uncertainty and conflict. "I'm fascinated with practical psychology and how to influence and obtain cooperation from others," he says. Today he teaches those skills to other people. In his article in this issue, adapted from his forthcoming book, *Order Out of Chaos,* he draws on his hostage negotiation experience to offer strategies for successful dealmaking in other contexts.



Having started his career as a social scientist studying moral reasoning, **David Bersoff**—now the head of research for the Edelman Trust Institute—continues to explore big societal questions. "Unlike in my early days," he says, "I don't talk about right and wrong as moral absolutes. I see them as being defined by people's expectations of their institutions." In this issue he and his coauthors unpack the public's expectations of corporations as they weigh in on hot-button issues and describe how companies can best manage those expectations.



**Felicity McCabe** is a London-based photographer whose work centers on the themes of memory, time, and the fragility of our environment. For her images featured in this issue, which are part of a series she calls *42 Feet* (after the traditional diameter of a circus ring), she traveled to Mongolia and photographed circus troupe trainees. "I loved the sculptural shapes that the young contortionists made," she says. "My hope is that the photos communicate the determination and grit of young people working together."


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**VOLUME 102, NUMBER 2 | MARCH–APRIL 2024**
Printed in the U.S.A.

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## IdeaWatch

New Research and Emerging Insights

IN THEORY

# Don’t Let Gen AI Limit Your Team’s Creativity

Treat it as a partner in a structured conversation.

**NO ONE DOUBTS** ChatGPT’s ability to generate lots of ideas. But are those ideas any good? In a recent real-world experiment, teams engaged in a creative problem-solving task saw modest gains from AI assistance for the most part—and some underperformed. Don’t blame the technology, says Kian Gohar, CEO of the leadership-development firm GeoLab and one of the study’s authors. Common misconceptions about generative AI, problem-solving, and the creative process are causing workers and their managers to use the tools improperly, sometimes leaving them worse off than if they’d proceeded without AI input.

Gohar and his coresearcher, Jeremy Utley of Stanford University, partnered with four companies: two in Europe and two in the United States. Up to 60 employees in each firm were asked

*Illustrations by* JUSTYNA STASIK

to work in small teams on a business problem their company faced—how to develop internal training resources, for example, or how to scale up B2B sales of a particular product. At each of the firms, some of the teams (those in the control group) approached the problem without any help from AI, while others (those in the experimental group) were given an open-source version of ChatGPT. All the teams watched a short presentation about the problem they were tasked with and had information sheets spelling out relevant details.

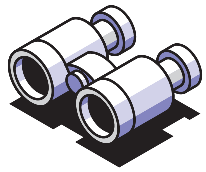
The teams had 90 minutes to generate potential solutions, following a structure prescribed by the researchers. Employees first worked individually and then shared their ideas with their teammates during a brainstorming session. Teams in the experimental groups could use ChatGPT during both ideation phases, and they were encouraged to train the tool on the problem by inputting material from the information sheets. At the end of the exercise each team submitted its ideas.

The "owner" of each problem—the person in each organization responsible for implementing the eventual solution—judged the ideas, assigning grades from A ("highly compelling") to D ("not worth pursuing") without knowing which had emerged from human-machine collaborations. The results upended the researchers' expectations, Gohar says. He and his colleagues had assumed that teams leveraging ChatGPT would generate vastly more and better ideas than the others. But those teams produced, on average, just 8% more ideas than teams in the control group did. They got 7% fewer D's, but they also got 8% more B's ("interesting but needs development") and roughly the same share of C's ("needs significant development"). Most surprising, they got 2% fewer A's. "Generative AI helped workers avoid awful ideas, but it also led to more average ideas," Gohar says. Surveys conducted before and after the exercise showed that the teams using AI gained far more confidence in their problem-solving abilities than the others did—a difference of 21%. But the grades they received suggest that much of that confidence was misplaced.

Of course, the potential for gen AI in problem-solving is real, Gohar says. Here are a few steps for maximizing it.

**Be precise about the problem you want to solve.** The large language models that undergird generative AI chatbots are designed to give "average" answers; their algorithms have been trained to identify the highest probability of sequential words. If one types, "I bark like a…" and asks the bot to complete the thought, it will almost certainly offer the word "dog." But if teams are seeking out-of-the-box solutions, average answers will be of little use.

So managers should teach their teams to craft highly specific problem statements, including as much detail as possible, before engaging with the tool. For example, instead of asking, "How can we improve customer satisfaction?" teams could say, "Our customer journey involves the following steps….What changes to our onboarding step will improve retention by 10%?" Gohar comments, "People expect AI to be an oracle: Plug it in, and it will give you your solution." Teams that took that approach—simply stating the problem in broad terms and asking ChatGPT to solve it—got lackluster results.



**Make time for individual brainstorming without the bot.** Before they interact with the AI, give team members some time—15 minutes to a half hour, say—to individually come up with ideas. That will help ensure that they approach the team meeting and the deployment of AI unaffected by groupthink or by what the tool suggests. This step is crucial to gathering diverse and creative ideas and maximizes the number of unique ideas brought to the group for discussion.

**Rigorously train the AI.** Gen AI systems lack the contextual understanding that people gain over months or years of working in their organizations and industries. Before integrating ChatGPT or a similar tool into the ideation process, you need to help it catch up. Input as much data related to your specific problem as you can. That might include a customer group's way of thinking, previous successes and failed initiatives, and industry benchmarks.

**Approach AI as an ongoing conversation partner, not an oracle.** The teams in the study developed better ideas when they went back and forth with ChatGPT multiple times. "Most problem-solving requires a conversation," Gohar says. "You would have a discussion with your colleagues to come up with a better solution to a problem, and that holds when one of those colleagues is ChatGPT."

Many of the teams in the experiment simply accepted the first suggestion ChatGPT offered up. Gohar attributes this to the Einstellung effect: a cognitive bias whereby people gravitate to early, familiar solutions rather than explore possibilities more expansively. That probably contributed to the high rate of B-grade ideas generated by the AI-assisted teams. No matter how good the tool's initial suggestion might seem, teams should always follow up with more, and more-specific, questions, Gohar says. Doing so lets the model refine its responses and gives users more solutions to ultimately choose from. "The teams that got A's were those that had interactive conversations with the bot," Gohar emphasizes.

**Have someone outside the team facilitate the final decision.** When the team comes together to share possible solutions, designate one member to consolidate the suggestions. Then ask the AI to analyze them for alignment with your objectives, offer critiques, challenge assumptions, and suggest more alternatives. This step also serves as a training mechanism and will improve the model's future performance. It can be useful, Gohar says, to enlist an external facilitator—someone with no dog in the hunt, who ideally is well-versed in AI ideation—to guide the process, help prioritize ideas, and plan next steps.

"Brainstorming with generative AI requires rethinking your ideation workflow and learning new skills," Gohar concludes. "But if you approach it as a structured, ongoing conversation, you can access a staggering capacity to develop better and more-creative ideas faster."

**HBR Reprint** F2402A

**ABOUT THE RESEARCH** *"Evaluating the Practical Impact of Generative AI on Ideation and Team Problem Solving," by Kian Gohar and Jeremy Utley (working paper)*

IN PRACTICE

# "The More You Question Generative AI, the Better Its Answers Will Be"

***Joe Riesberg** is a senior vice president and the chief information officer at Iowa-based EMC Insurance, one of the organizations that participated in the research. He recently spoke with HBR about the experiment and what he learned about best practices for using generative AI. Edited excerpts of the conversation follow.*

**Why did you join the experiment?**
When ChatGPT came out, in November 2022, it was clear that the technology would have huge implications for our business. We immediately began studying it, and by early 2023 we had pinpointed five projects and use cases in which we thought it could improve our performance. So when the research team

approached us, we saw it as an opportunity to solve a real business challenge.

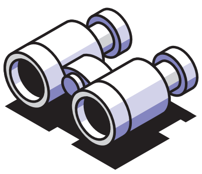
**What was the challenge?**
Our agents' relationships with customers are crucial, and we wanted to brainstorm ways to further improve them. We fed ChatGPT a few key documents about our company and its services. Then we asked our agents to find the most creative answer to this question: "How might we develop new ways to optimize interactions to enhance agent relationships and ultimately deliver superior customer service?"

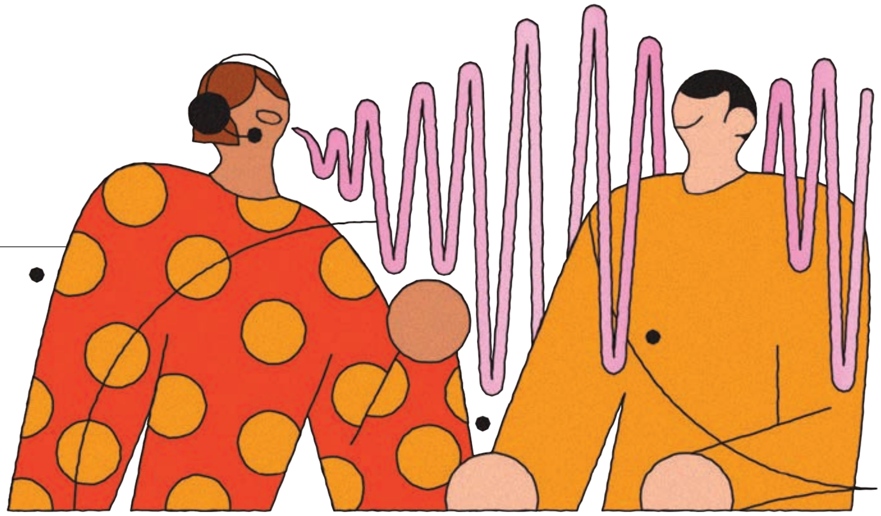
**Were you surprised by the results?**
I was! When I left work that day, I thought that the quality, quantity, and depth of the answers ChatGPT had given my employees on the experimental team were really powerful—surely better than the human-only answers. Turns out I was wrong.

**How so?**
My team came up with four or five ideas, fed them into the AI system, and asked it to improve on them. Once the system had generated a few responses, they accepted them without asking it for more-nuanced or -creative ones; they were so sure it had given us the best results right off the bat. But the system had generated what it thought would be the "right" solutions—the most logical ones available with the information it had—whereas my colleagues had been tasked with finding the most-creative ones. Too often the AI-assisted teams defaulted to just pasting ChatGPT's sensible but generic answers into a Word document.

**What lessons did you take away from the experiment?**
As Midwesterners, we at EMC are sometimes a bit too nice. It doesn't always come naturally to say to a coworker, "That wasn't a very creative answer. Give me better ones." But working with ChatGPT requires direct, unsparing feedback. The more you question generative AI, the better its answers will be. Drawing on it after the initial round of brainstorming can help get people over creative hurdles. And if they're able to repeatedly challenge the AI to improve its suggestions, they'll come up with incredible material. It can be hard to learn how to tease out those answers, though; people need time and practice. And the immediate efficiencies from the technology probably won't be as impressive as people hope. But the improvements from iterating with it—speed, productivity, creativity—will be tremendous in the long term.

*Photograph by* KENNY JOHNSON



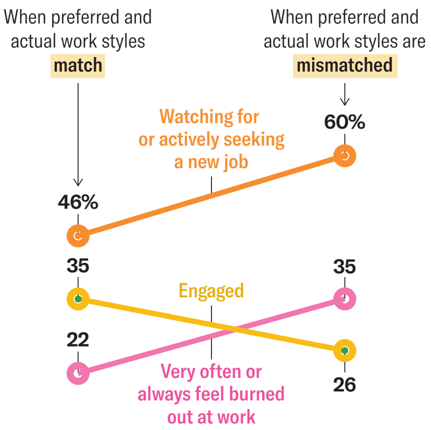


FLEXIBLE WORK

## Are You a "Splitter" or a "Blender"?

Splitters prefer a 9-to-5 schedule, while blenders like to switch between work and other activities throughout the day. A 2023 Gallup survey of U.S. employees finds that both do better when their preferences are accommodated. For example, just 46% of those whose preferred and actual work styles match are seeking a new job, versus 60% of those unable to work in their preferred style.

**Impact on employees**




Source: "Research: Flexible Work Is Having a Mixed Impact on Employee Well-Being and Productivity," by Jeremie Brecheisen (HBR.org, 2023)

COMMUNICATION

## To Demonstrate Empathy, Try Speaking Slowly

Ample research has shown that even small changes in wording can affect how a message is received. For example, service agents who use "I" rather than "we" see boosts in customer satisfaction; online reviews that include swear words are viewed as more helpful; and refusals couched as "I don't" rather than "I can't" are more persuasive. A new study finds that when it comes to conveying empathy, it's not just what people say that counts but also how they say it—specifically, the rate at which they speak. And that can have powerful effects on the recipient's perceptions and satisfaction.

The researchers began with a field study in which they analyzed nearly 200 customer-service calls to a large U.S. online retailer. Automated tools measured each representative's articulation rate, or the number of syllables uttered per second of speaking time, and customers graded the reps on helpfulness. The more slowly that reps spoke (within a normal range), the happier customers were with the help they received.

To explore what drove those results, the researchers conducted three experiments. In the first, participants were asked to imagine calling customer service with a billing issue. They listened to one of two versions of the supposed agent's response, recorded by a voice actor. In one version, the agent spoke one standard deviation more slowly than the average speed of the agents in the field study. In the other, the agent spoke one standard deviation more quickly. The participants then answered questions about the agent's empathy and helpfulness and their satisfaction with the call. Those listening to the slower agent perceived greater degrees of empathy and helpfulness and reported higher satisfaction.

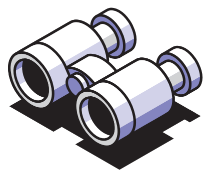
The second experiment was similar in design but compared slow and average speaking speeds and used a different context: Participants imagined that they were listening to a doctor's response to a persistent and distressing medical complaint. Here, too, slower speech increased perceptions of empathy and raised satisfaction; it also made the doctor seem more proficient.

The third experiment tested whether speed matters when people have less need for empathy: When participants were told that the medical issue was mild and would be easy to solve, the benefits of slow speech were less pronounced. Another analysis found that the gains were also lessened when speakers used inherently empathetic language.

"Speaking more slowly signals that communicators understand and care about their audience's needs," the researchers write. "Frontline employees seek to build loyalty, politicians want to be trusted, and educators strive to foster growth. Our results suggest that a relatively simple shift…can help."

**ABOUT THE RESEARCH** *"The Power of Speaking Slower," by Giovanni Luca Cascio Rizzo and Jonah A. Berger (working paper)*

IDEAWATCH



ACCESSORIES AS COMPETITIVE EDGE?

Freelancers who "look the part" in their profile pictures—for example, wearing glasses in the case of web developers and programmers—are more likely than others to get the gig, even when they're no better qualified. And they enjoy, on average, a 5% bump in pay.
"Look the Part? The Role of Profile Pictures in Online Labor Markets," by Isamar Troncoso and Lan Luo (forthcoming)

CONSUMER BEHAVIOR

## When In-Store Music Drives Sales

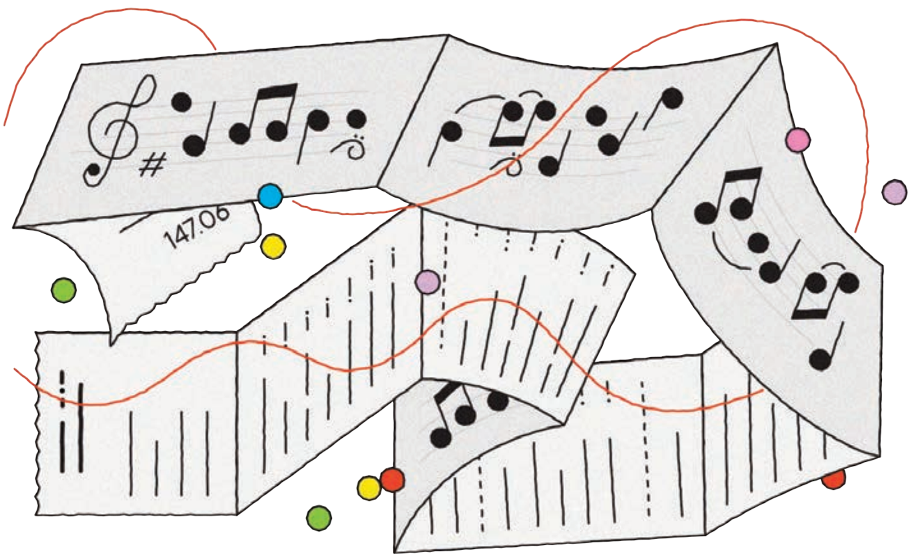
In some supermarkets, shoppers push their carts to the sound of pop hits. In others, Muzak plays in the background. Still others have no piped-in tunes of any sort. What's the impact, if any, of each environment on sales?

To find out, researchers first conducted a three-week field study in three European stores belonging to the same supermarket chain. Each music condition—pop hits, Muzak, and silence—ran for a week in each store. Analyzing store data showed that on weekdays, music of both types boosted sales by a hefty 11%. On weekends, it made little difference; if anything, it slightly diminished sales. A second field study and a controlled experiment yielded similar results.

Interviews with shoppers suggest that the difference springs from the fact that people are more mentally depleted during the week, so they engage in more-intuitive processing, a feelings-based mode of thinking that can be influenced by elements such as music. During weekends, when shoppers are more rested and typically aren't focused on their jobs, music fails to exert the same effect.

"There are fewer benefits to be had from playing music when people are not depleted, and it even may lead to detrimental effects," the researchers write. "Grocery retailers should therefore play music and offer affective cues on weekdays, but they should prioritize other marketing elements...such as tastings or customer interactions with sales associates" on weekends.

**ABOUT THE RESEARCH** *"Understanding How Music Influences Shopping on Weekdays and Weekends," by Carl-Philip Ahlbom et al.* (Journal of Marketing Research, *2023)*

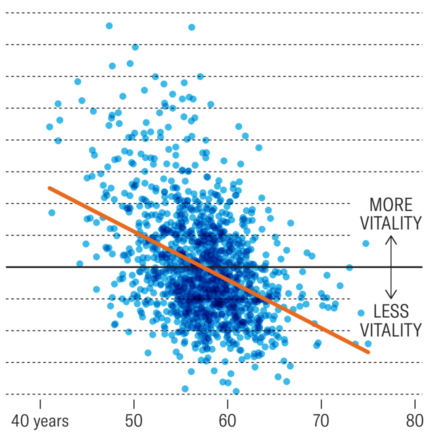



CEOS

## Why Firms Need Leaders of All Ages

The average age of new CEOs is rising, but a 2022 analysis of more than 1,000 U.S. public companies suggests that as it does, "corporate vitality"—a measure of long-term prospects based on sales growth, strategic orientation, and other factors"—declines. Intergenerational leadership can help firms balance experience with curiosity.

**Corporate vitality by CEO age**




Source: "Businesses Need to Bring Younger Employees into Their Leadership Ranks," by Martin Reeves et al. (HBR.org, 2023)

E-COMMERCE

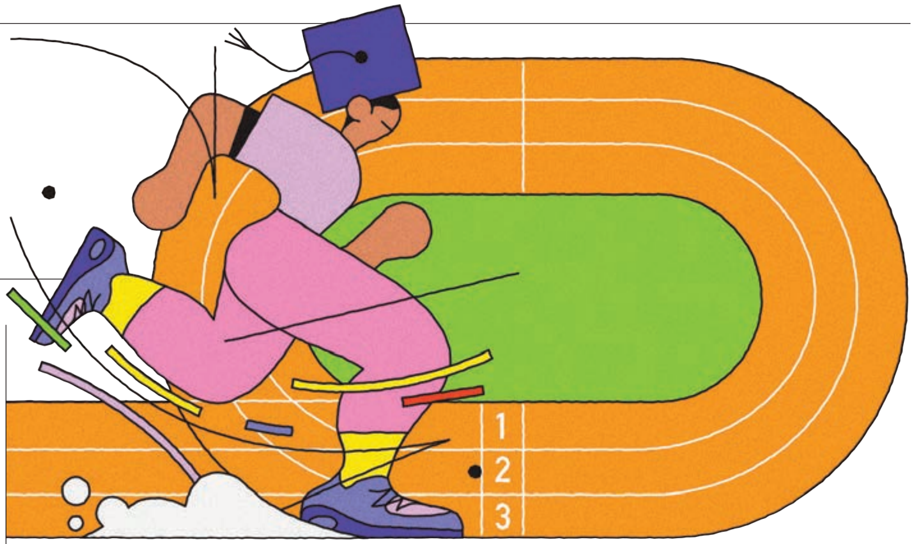
## What If *All* Personal-Data Use Were Banned?

With regulations governing the use of personal information being proposed and enacted around the world, researchers decided to simulate the effect of privacy protections at their most extreme: the outlawing of any collection or use of personal data at all.

The researchers conducted a field experiment with China's largest online retailer, Alibaba. They tracked more than 500,000 customers who logged on to the platform on a typical day—one with no major promotions or campaigns. They adjusted the usual recommendation algorithm for half of the selected customers, removing all personal data and comparing their activity with the behavior of the people in the control group.

The products recommended to the experimental group were concentrated among a much smaller number of items than usual, with mainstream products and those from relatively large sellers getting the most exposure while small, niche, and newer sellers suffered disproportionately. Click-through rates and browsing among the experimental shoppers dropped immediately, resulting in an 81% decline in purchases. Only a small group of shoppers compensated by conducting their own product searches. The declines in browsing and purchase were steepest among newer customers, women, those with low purchasing power, and those from developing regions—the types of customers who benefit most from e-commerce. "Data regulation might not only lead to a downsizing [of internet sales] but may also bias the development of e-commerce in a certain direction," the researchers write, arguing for a careful balancing of data privacy and data value as policymakers ponder the issue.

**ABOUT THE RESEARCH** *"The Value of Personal Data in Internet Commerce: A High-Stakes Field Experiment on Data Regulation Policy," by Tianshu Sun et al.* (Management Science, *forthcoming*)




CAREERS

## Winning On the Field and Off

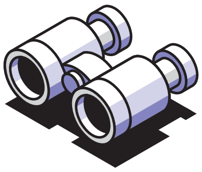
Recruited athletes have greater odds of acceptance at elite colleges and universities than other students do even when their prior academic achievements are less impressive. Does that mean they're likely to underperform later on? A new study investigating their career outcomes suggests just the opposite.

The researchers examined the work histories of more than 400,000 varsity athletes and nonathletes who graduated from Ivy League schools from 1970 to 2021. They chose that dataset because athletes admitted to those institutions are closer academically to their nonathlete classmates than is the case at some non-Ivies. By scraping athletic department websites to identify varsity letter winners, studying résumé information gathered by the labor analytics firm Lightcast (which in turn draws on LinkedIn), and using wage information from the U.S. Bureau of Labor Statistics, they found that athletes outperformed on several measures. They were far more likely than nonathletes to earn an MBA, especially from a highly ranked school, and were more likely to attain a C-suite position. They earned greater lifetime wages ($1.82 million, on average, versus $1.60 million) and reached higher peak annual wages ($135,000 versus $126,000). They were tapped for senior roles earlier and accumulated significantly more seniority over the course of their careers.

Looking at subsets of athletes, the researchers found that competitors in sports generally associated with private high schools—crew, lacrosse, squash, equestrianism—had marginally better career outcomes than those in sports commonly played in public high schools, suggesting that socioeconomic backgrounds played some role. But the best career outcomes of all were among athletes in racially and socioeconomically diverse sports (football, basketball, track) and in sports with the lowest academic thresholds for admission (football, hockey, basketball), indicating that those students developed important job-related skills from their participation in athletics. "Varsity athletes spend a significant amount of time each week training," the researchers write. "Such repeated uptake of hard physical work requires and builds discipline, perseverance, and grit, which [have] been shown to be associated with long-term success."

**ABOUT THE RESEARCH** *"No Revenge for Nerds? Evaluating the Careers of Ivy League Athletes," by Natee Amornsiripanitch et al. (NBER working paper)*

IDEAWATCH



GENDER

# Employees Don't Go the Extra Mile for Female Founders

It's well-known that women face extra obstacles when trying to get entrepreneurial ventures funded. According to a new study, the lopsided challenges persist: Employees put in less unpaid overtime when the firm's founder is a woman.

The researchers capitalized on a statute requiring all new companies in Portugal to record information on each employee's work hours. They analyzed those of 243,269 employees at 58,832 firms from 2002 to 2012 and found that people working for female leaders spent 1.4 fewer extra hours on the job per month—a difference of 7%. To explore causality, the researchers followed with two experiments in which several hundred online participants were hired to code images for a supposed start-up and asked if they would do a few more without additional pay. Some were told the firm was led by "Matthew and Joe," some thought it was led by "Amanda and Chloe," and some had no information about the bosses. Fifty percent of those who thought they were working for Matthew and Joe took on the extra work, compared with 40% of those working for Amanda and Chloe and 30% of those who knew nothing about the firm's leadership.

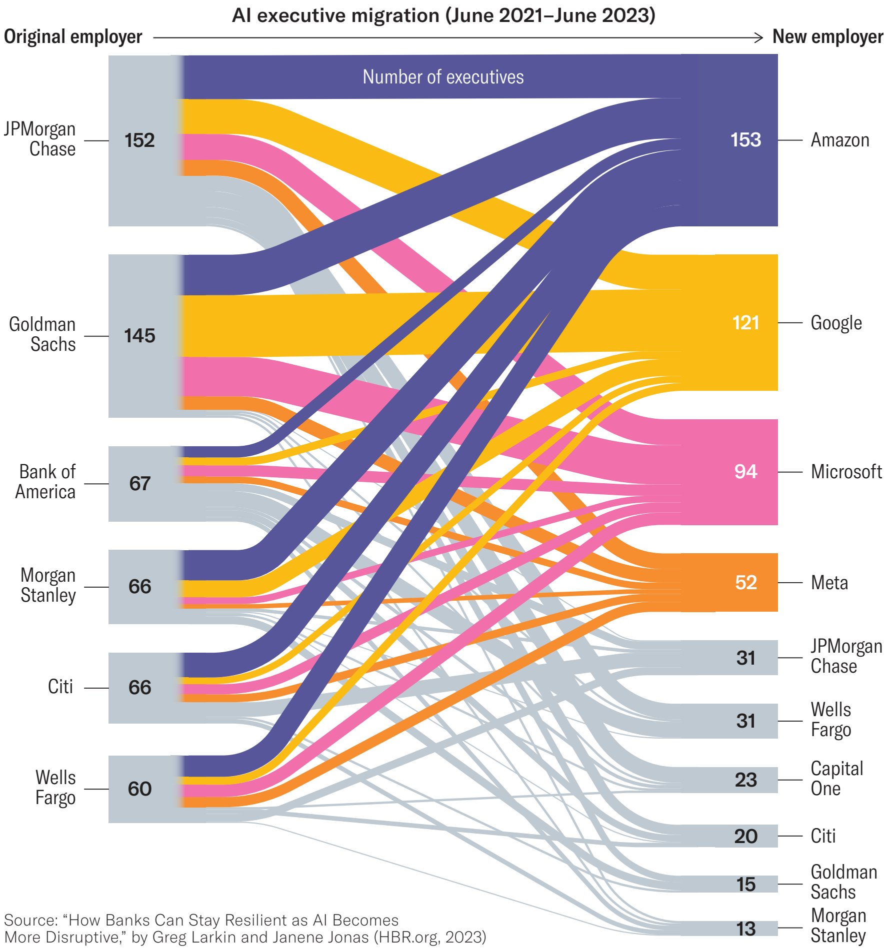
Surveys showed that the difference in effort sprang from assumptions about gender. "Women are generally perceived as prioritizing work-life balance over high-devotion labor," the researchers write, and so "employees are liable to associate female founders with lower work demands." When that's not the case, as when people are asked to contribute extra time and effort, they feel unfairly treated and are loath to extend themselves for the company's good.

**ABOUT THE RESEARCH** *"Do Employees Work Less for Female Leaders? A Multi-Method Study of Entrepreneurial Firms," by Olenka Kacperczyk, Peter Younkin, and Vera Rocha* (Organization Science, *2023)*

AI TALENT

# The Great Migration

The past two years have seen an exodus of U.S.-based AI executives from Big Finance to Big Tech. The chart below, based on an analysis of LinkedIn data by the entrepreneurial community Punks & Pinstripes, shows the movement of tech executives from top banks to positions elsewhere.




Source: "How Banks Can Stay Resilient as AI Becomes More Disruptive," by Greg Larkin and Janene Jonas (HBR.org, 2023)

B2B SALES

# The "Friends and Family" Surcharge

Many B2C organizations offer discounts to employees and those in their circles. Researchers wondered whether social ties influence B2B transactions as well. A prior relationship between buyer and seller did affect pricing, they discovered—but it served to raise, not lower, the amount charged.

## THE UNIVERSITY ADVANTAGE

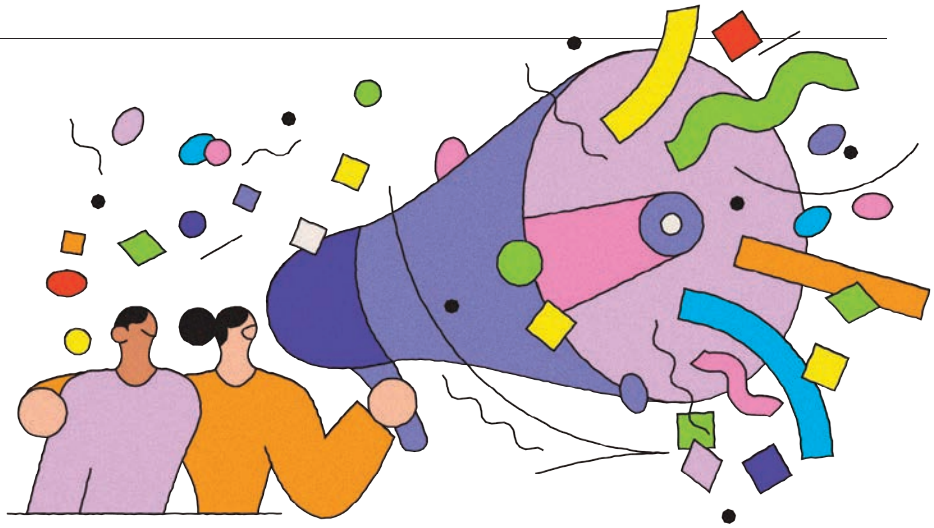
**Innovations are more appealing to consumers when marketed as codeveloped with a university—and people are willing to pay up to 65% more for them, perceiving them to have greater scientific legitimacy.**

"University Knowledge Inside: How and When University-Industry Collaborations Make New Products More Attractive to Consumers," by Lukas Maier et al. (forthcoming)

The researchers gathered five years' worth of data on transactions in the Federal Reserve's repo lending program—the largest market for short-term loans in the United States. They identified the portfolio manager responsible for each loan—the seller—and used LinkedIn, Capital IQ, and Bloomberg to establish whether that person had previously worked for the bank receiving the loan. Their analysis showed that sellers who were once employed by their buyers charged a quarter of a basis point more for a loan, on average, than other sellers did, representing a 3% rise in profit margin.

Why did buyers accept higher prices? They were paying for reliability, the researchers found. During an unexpected shock in the repo market that left many buyers scrambling for cash, sellers acted more reliably toward buyers with whom they had a previous professional connection, providing them with the added funds they needed. "Managers might want to consider the professional ties of their team members (i.e., whether a current employee is a former employee of a client) when crafting their sales teams," the researchers write. "Similarly, managers should be aware of professional ties when making recruiting decisions because, as our research reveals, new employees bring assets beyond their experience and expertise that can affect their contributions to a firm's profitability."

**ABOUT THE RESEARCH** *"The Value of Professional Ties in B2B Markets," by Navid Mojir and Sriya Anbil (working paper)*



IMPRESSION MANAGEMENT

## Bragging That Doesn't Backfire

Self-promotion is tricky. How to talk up accomplishments without coming across as boastful? A new study finds a solution: *Dual-promoting,* or touting the skills and achievements of others along with their own, can help people project both competence and warmth.

In the first of several experiments conducted with more than 1,500 participants, the researchers asked U.S. managers involved in hiring decisions to read an employee's evaluation of a project completed with a colleague. Half read remarks that highlighted both workers' contributions ("Alex's work really impressed me. We both took charge of what we do best"); the other half read purely self-promoting ones ("I took charge of what I do best"). All then rated the employee on competence, warmth, and overall impression. The self-promoting and dual-promoting employees got similar marks on competence, but the latter were deemed much warmer and left a better impression.

Subsequent experiments showed that dual-promotion burnished people's image regardless of whether colleagues or others also engaged in it. And in the final experiment, registered voters reading either dual-promotion or self-promotion statements by a fictitious politician perceived the dual-promoter not just as warmer but also as more competent—suggesting that in a political context, acknowledging others sends an especially strong signal of confidence and expertise. The voters were also more willing to support the dual-promoter at the ballot box. "Sometimes, the best way to describe our accomplishments and make a good impression is to be sure that we also compliment others," the researchers write.

**ABOUT THE RESEARCH** *"Dual-Promotion: Bragging Better by Promoting Peers," by Eric M. VanEpps, Einav Hart, and Maurice E. Schweitzer* (Journal of Personality and Social Psychology, *forthcoming)*

IDEAWATCH

The guidance for established companies is clear and backed by research: Having and communicating a social vision will help you attract employees. Erasmus University's **Murat Tarakci** and a colleague—Timo van Balen of Utrecht University—wondered if young firms should follow the same advice. So they tracked responses to the job postings of 795 new U.S. and Canadian ventures. Those highlighting a social mission received 46% fewer applications than others. **The conclusion:**

# For Start-Ups Seeking Talent, a Lofty Purpose Can Backfire

## Professor Tarakci, DEFEND YOUR RESEARCH

**TARAKCI:** I have yet to meet someone who says they don't want to make the world a better place. But life at a start-up is grueling. It typically means working very long hours in the face of huge market and technological uncertainties. People take that on for certain reasons. They might hope the firm will have extraordinary returns they can cash in on. They might be looking to build a reputation and their careers. Several early Google employees, for example, went on to lead other major tech firms. They might be seeking growth opportunities and autonomy. They're generally considering factors besides alignment with organizational values, or so-called value fit.

If a new venture focuses on its social mission when recruiting, people perceive it as having a longer path to profitability, slower growth, and limited potential for success—reducing the appeal for candidates prioritizing career opportunities or quick financial gains. A new firm's emphasis on a social mission also might seem like a call to put your own needs aside. Established companies don't have those problems when they tout a social vision. They're known quantities with a lot of existing employees. They may have gotten some press coverage and even appeared on a "best places to work" list. They're also assumed to have the resources to offer competitive pay and career opportunities and to invest in employee learning and growth. But start-ups are a blank slate and rely largely on communicating their vision.

**HBR: Were you surprised by the results?** Disappointed, to be honest. We embarked on this project with a certain amount of wishful thinking. We need start-ups that will come up with innovations that create a better world. Everyone we asked said that of course they'd like to work at such a firm. But there's often a gap between what people say they'll do and how they act. That's most likely the case here: There's a difference between job seekers' initial attraction to a socially minded company and their eventual decision about applying. We saw that in our second study, which we conducted among business school students.

**What did that involve?** We worked with a start-up looking to fill an entry-level position in business consulting, analytics, and operations research. We created several versions of the same job posting: Some emphasized the start-up's desire to build a better world, and some omitted that aim. We sent the posting to 102 soon-to-graduate students at Erasmus University, randomly assigning them to one version or another and instructing them to apply by uploading their CV if interested. We then surveyed them about various topics, including their perceived value fit with the firm and the



Illustration by AGATA NOWICKA

degree to which they thought the job would help their careers.

The probability that applicants would apply decreased 22% when postings included a social vision. Students who viewed them reported a higher value fit than other students did, but that wasn't enough. They foresaw fewer career-advancement opportunities, and that clearly trumped value fit when it came down to deciding to apply.

**So much for idealism! How can a start-up attract employees if it wants to communicate its social vision?** There's some good news in our findings: They show social entrepreneurs what to do to attract talent. One important insight is that people seeking jobs at a start-up are motivated by a desire to advance their careers. So when social entrepreneurs need to hire, they don't have to suppress the goal of making the world a better place as long as they make it clear that working there won't hurt career growth.

Another tactic is to recruit outside the usual channels. We did a third study—it's not in the paper—in which we talked to entrepreneurs and employees at eight Italian start-ups. Four were not-for-profit social ventures, and four were for-profit firms. The for-profits had no problem finding applicants through LinkedIn, Facebook, university job boards, and so on. That didn't work for the social entrepreneurs. They relied more on their personal networks.

**What about money?** We looked at that in both studies in our paper. In the one involving North American start-ups, we found that if a venture offered a high salary along with equity, the fallout from communicating a social vision disappeared. In the one at Erasmus, the students wanted a premium to join a start-up with a social mission. They asked for €221 more a month, about US$234. So if start-ups can offer a pay bump—and we realize that's not always possible—that will help.

**You collected your data in 2019—shortly before the pandemic. Might job seekers today place more importance on a firm's social vision?** I would hope so. What we experienced during the height of Covid should have spurred people to reconsider what's most important. But my hunch is that if priorities did shift, they will quickly revert.

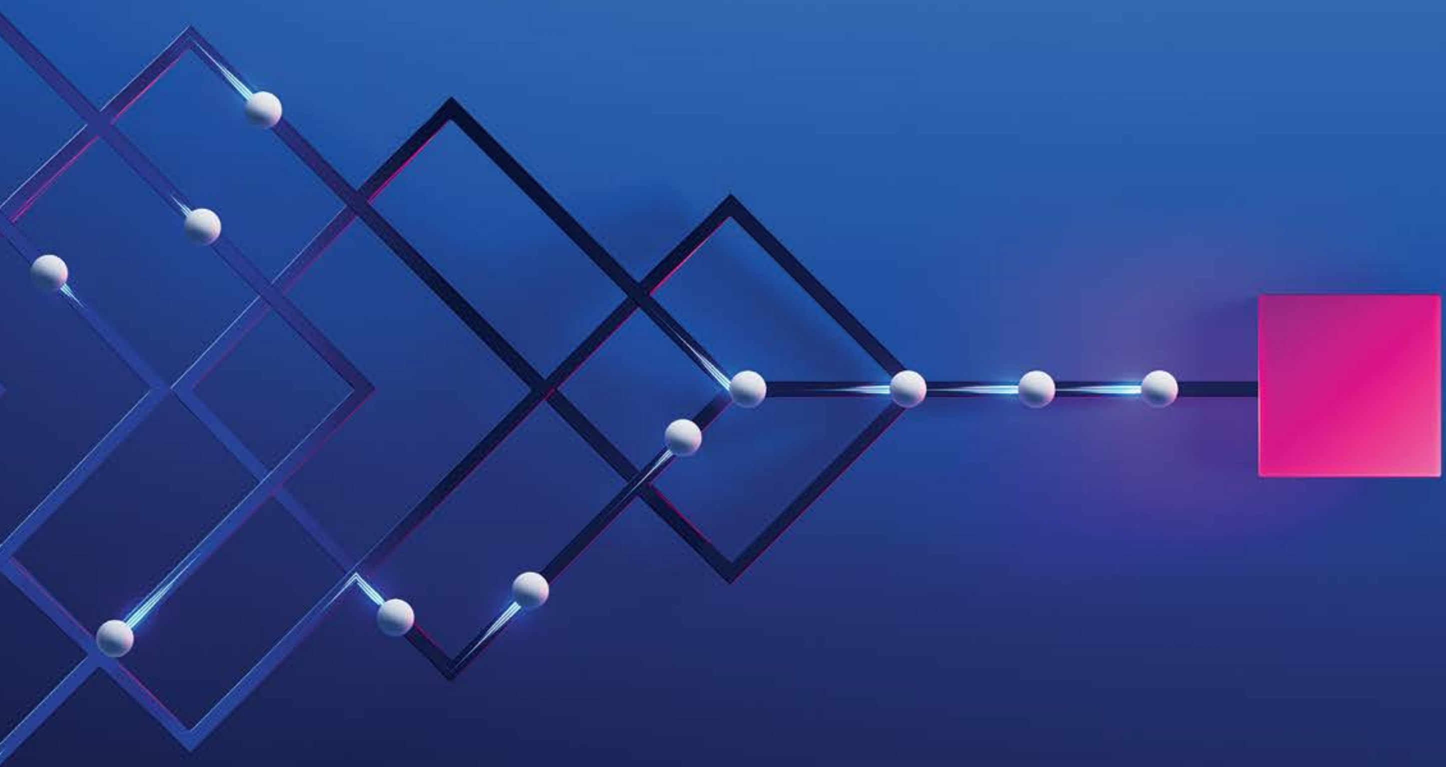
**You studied Western start-ups. Would you expect similar findings in, say, China or Japan, where the culture puts less emphasis on the individual?** I would. I think young people there are interested in working at start-ups for the same reasons as people in the West: money, reputation, learning, experience, autonomy. But there might be differences in how much harmony they want and how much they attend to power differences.

**How about freelancers?** They're less likely to be deterred by a heavy emphasis on social vision. Vanessa Burbano, a professor at Columbia, found that freelance workers are willing to accept lower hourly pay for jobs related to social responsibility. The investment they make in an employer is very different from the one full-time employees make. They're often open to doing a couple of pro bono tasks or getting less money because the sacrifice is relatively low and they can move on after the project is done.

**What are you working on now?** We're interested in what happens at the selection and retention stages of employment. In our initial studies, we focused on recruitment because having a large pool of applicants generally helps entrepreneurs hire the right talent. But maybe it's OK that the social ventures we looked at attracted fewer applicants. Perhaps those who did apply are a better match and are likely to stay a lot longer. That could be a silver lining.

Interview by **Amy Meeker**

**HBR Reprint** F2402B



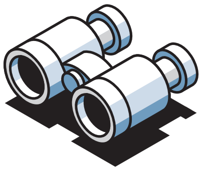
# How We Did It
## The Chair of Honeywell on Bringing an Industrial Business into the Digital Age

by Darius Adamczyk

How can you quantify the benefits of a digital transformation? During my recent tenure as the CEO of Honeywell, we spent significant time, energy, and capital on our IT infrastructure—more than the company ever had before. Was the investment worth it? Although it's hard to estimate exactly how much value we derived from streamlining our systems and improving our internal and external data and analytics capabilities, I have a clear view: There's zero chance that we would have made it through Covid, inflation, the upswing in geopolitical risk—all the challenges we faced over the past several years—had we not developed a transparent and coherent digital strategy.

Honeywell serves a range of businesses—aircraft, industrial facilities, warehouses, buildings—with connections to automation, the future of aviation, and energy transition. We help clients connect all the devices, products, and sensors in their systems to increase operating efficiency, productivity, and growth. When I was appointed chief operating officer, in 2016, following stints leading our process solutions and performance materials and technologies divisions, I finally got a top-down view of the whole company and quickly realized that our own systems weren't

Photographs by WILL CROOKS



in a good place. We had more than 150 enterprise resource planning systems (ERPs), some 2,700 applications, 1,700 websites, and no overarching plan for collecting and using data. I knew that to credibly help customers, we would have to become more digitally savvy ourselves.

The question we asked ourselves was "Is it possible to use digitalization to transform a diversified industrial conglomerate into an integrated company?" We wanted to further link our businesses and to change the kind of company we were, not just how we handled data. But to do that we had to reconceive the systems we relied on—both our own and those we offered to customers.

Internally, the goal was to improve productivity, transparency, and agility. Externally, it was to help us harness all the information being generated by the systems we sold and allow us to offer clients a whole new kind of value: a means to track emissions, save energy, improve safety, and more. That capability would help launch a software business within our legacy industrial one.

When I was promoted to CEO, in 2017, I established four priorities: (1) enhance organic growth, (2) continue margin expansion, (3) lean into software as a key part of our value proposition, and (4) deploy capital more aggressively. Digital transformation was essential. We needed to streamline our IT infrastructure down to a manageable number of data sources and to develop centralized, definitive, accurate master databases—one for products, one for customers, one for employees, and several others—all structured in a similar way. We wanted to be able to take all that information, manipulate and analyze it, and actually do something with it—and to help our customers do the same.

## FOUNDATIONAL EXPERIENCE

My background is in engineering, so I've always believed in the power of data to improve decision-making. I was also lucky enough to take roles throughout my career that helped me grasp how systems work and how many discrete systems make up a whole, all of which prepared me to lead a digital transformation.

After university, I started at GE Aerospace, working on various engineering teams. In those first few years I was doing hard-core technical and algorithm development, so I got very comfortable with data and analytics and a quantitative approach. My second job was at Booz Allen Hamilton, where my consulting assignments gave me a view inside a variety of industries, companies, and customer issues. There I learned how to think about enterprise-wide problems, from where to begin diagnosing them—What information do I need? What interviews should I do? How can I gain access to people and data?—to how to recommend strategy and execution.

Next I joined Ingersoll Rand to work in business development, where I got an education in mergers and acquisitions: How do you assess targets? How does your inorganic strategy match your organic strategy? How do you do transactions? Then, for the following six-plus years, I ran various businesses spanning both services and products, which gave me hands-on experience navigating a variety of business models.

After that I became the CEO of Metrologic, a private company in the IT space with about $300 million in revenue. I didn't have the same resources I'd had at my previous, much larger employers, but those constraints taught me to be adaptable and to innovate and act quickly or risk being left behind.

After Honeywell acquired Metrologic, in 2008, I cycled through multiple roles, each with a bit more responsibility and scope. Initially I was managing the day-to-day operations of businesses for which a detail orientation was critical. Later, as I moved on to larger P&Ls and teams and couldn't be as hands-on, I needed to embrace data, processes, and structures. When I became the COO, I realized that the entire company needed to do the same—under a unified strategy. That wasn't just a problem to solve—it was an opportunity.

## A MULTIFACETED TRANSFORMATION

Within Honeywell itself, we needed transparency- and efficiency-enhancing systems with centralized data to guide our business decisions. We called the effort to build them Honeywell Digital. Externally, we needed to offer systems that would put our customers' data to work for them in new ways. We called that effort Honeywell Connected Enterprise.

We divided the internal project into three phases. The first was simplifying and reorganizing our infrastructure: going from 150-plus ERPs to 10; from 1,700 websites to fewer than 100; from 2,700 applications to fewer than 1,000. A glut of software and systems presents technical risks, including obsolescence, and is much more difficult to maintain. Streamlining significantly reduced the budgets needed to keep things operating smoothly.

The second phase was defining master databases for products, employees,

> We wanted to link our various businesses through digitalization and to change the kind of company we were, not just how we handled data.

*Vimal Kapur (left), Honeywell's current CEO, with Darius Adamczyk*

customers, and many other things. Without masters, every silo has its own dataset, which may not be current or consistent with what other parts of the business are looking at. To create those masters, though, we had to go through all the competing reams of data and sort out the inconsistencies to figure out what was correct and what wasn't; format the data so that it could be compiled; and install the systems necessary to house everything in one place—all of which required an enormous data cleanup effort.

The third, most exciting phase was developing a strategy to put the data to work. That part of our transformation has had its own arc. We started small, working within a function—integrated supply chain or HR or finance—to implement the new systems. Once they were in place, we worked to connect data across functions to create visibility into the whole value stream. That process later guided enterprisewide activities such as people planning (How do our budgets translate into staffing needs across units?) and pricing (What do we see on a product level, business unit level, and so on?).

The external effort was more complicated, because we had software businesses within each of our four strategic business groups: aerospace, performance materials and technologies, building technology, and safety and productivity solutions. We needed to actually lift software from those businesses to create Honeywell Connected Enterprise. That group operates across the company horizontally to leverage IT infrastructure and bring appropriate software expertise and vertically to draw on domain expertise and access to customers.

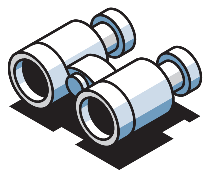
We also created a new technology offering—something we called Honeywell Forge. Industrial and operational systems are complex and are often built for a specific plant or building. Because we were already involved in the hardware and systems layers, we could start offering a cloud-based software-as-a-service layer that captures data from all the moving pieces in an operation, feeds it into a data lake, and then provides analytics with which customers can create value.

For instance, our Forge Connected Warehouse software automates data collection and provides a real-time view of what's happening along with recommendations for reducing downtime and creating new efficiencies by, for example, identifying bottlenecks. All this is available on a tablet-optimized dashboard.

In another example, Honeywell Connected Enterprise software can be used in buildings to collect real-time data on energy use, occupant experience, and air quality. In our industrial segment it can point to preventive-maintenance needs and emissions levels and guide the creation of digital twins that can provide insights about buildings and systems.

In aerospace Honeywell Forge Flight Efficiency helps companies choose more-efficient routes to save fuel; the Dutch carrier Martinair Cargo credits it with reducing fuel consumption in its fleet of four Boeing 747-400 freighters by more than 540,000 pounds in a single year.

In cybersecurity we offer companies an enterprisewide platform that unifies their security capabilities and makes it easier to manage risk. And our Honeywell Connected Industrial Worker software gives clients visibility on the proficiency, efficiency, safety, and security



of employees, no matter where they're located.

## GETTING IT DONE

When you begin a change effort like this, it's very painful. You always get internal pushback: "Why are we doing this? It's never going to work." You have to get over that barrier and secure buy-in.

To ensure the success of Honeywell Digital—our internal effort—I put myself at the center of the operating structure. When you're the CEO, the organization doesn't listen to what you say as much as it follows what you do, so you can't delegate mission-critical strategic projects. By running the monthly meetings and the operating reviews, I sent a message to everyone: I care about this transformation personally, and we're committed to this path. At the same time, it was important to remain open to ideas and feedback and be willing to query people, processes, and decisions until I fully understood them. Some leaders struggle with this, worrying that people will think they don't know what they're doing; but you're much better off asking obvious questions early than making poor decisions later.

To launch the customer-facing initiative—Honeywell Connected Enterprise, which now houses Honeywell Forge—we held a two-day offsite. Because the project required extracting parts of our existing businesses to create the new one, I anticipated significant concern among my colleagues. So I didn't want to just deliver an edict. We needed people to believe in and take ownership of the initiative for it to work. We had an open debate about what we wanted to do and why, what would work and what wouldn't. We wanted to ensure that all the participants could speak their minds and feel heard and to candidly discuss challenges so that we could develop a plan for overcoming them. Eventually everyone agreed that the project had merit and would greatly benefit Honeywell in the long run.

In the end I think we probably underestimated the power of this digital transformation to deliver value for us and for our customers. Some of the change might seem small. For instance, instead of spending days wading through spreadsheets and writing reports, we can now lift data from a central warehouse and automatically populate reports and even PowerPoint presentations in close to real time. We can see in granular detail exactly how each business is doing on things such as pricing, new product launches, and productivity.

Other changes are more dramatic. Honeywell Accelerator, our internal operating system, started as a learning tool. But through the digital transformation process it has become a way to take best practices from our highest-performing businesses (along with external best practices) and standardize them across the company. That includes applying them to slower-growing businesses to improve their performance or to newly acquired companies to rapidly integrate them. Culture and processes used to be very organic; now we're able to efficiently deploy our operating tools across the enterprise.

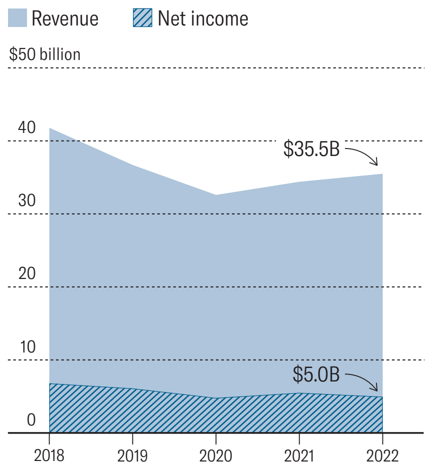
The past few years have tested every company, but they've also reinforced how digital transformation has made us more resilient. Take Covid and remote work during the lockdowns: At many companies lots of information was shared face-to-face: An employee would walk down the hall to talk to somebody in the next office. But when the pandemic struck, we had already spent years building our data infrastructure. Trying to run the company without easy access to that data would have been clumsy and inefficient—and we wouldn't have had the clear view of what was really going on in our businesses that we needed to quickly adapt to the new reality.

The phase of our transformation that we think of as "simplify and digitize" ended in 2022. Since 2016 we had seen our average organic sales growth go from 3.4% to 5%, and our segment margin grow from 18.3% to 21.7%. Additionally, we had interlinked and integrated our four strategic business groups in a way that hadn't been possible before. Perhaps most important, the digital

FACTS & FINANCIALS

## Honeywell

Founded: 1906
Headquarters: Charlotte, North Carolina
No. of employees: 97,000




2018 financials include contributions (~$6.5B in sales) from businesses that were spun off in October of that year (Resideo Technologies and Garrett Motion); 2020 revenue and net income were adversely affected by Covid.

Source: Honeywell

transformation had laid the foundation for the next phase of the company's evolution, which we think of as "innovate and grow."

**I STEPPED BACK** from the chief executive role to become Honeywell's executive chairman in 2023, but it's clear that our digital transformation prepared us for the work that my successor, Vimal Kapur, is doing. He recently announced plans to focus on three megatrends: automation, the future of aviation, and energy transition. Honeywell Accelerator and Honeywell Connected Enterprise are central to those plans and to how we're going to compete and drive growth.

Each of the jobs I had prior to leading Honeywell helped me see a different aspect of how to successfully navigate the challenging task of our simplify-and-digitize transformation. At the core was my training as an engineer and the lessons from my very first job, which instilled in me a belief in the power of using data in decision-making. Each step I took from there helped me understand a new piece of how data is created, shared, and used in companies.

In a way, digital transformation is really a matter of being able to create a system to capture and harness data and then to unleash its power on whatever it is you're doing. The system you're building will make sense of huge, complex processes and clarify what's really happening. But to achieve that, you have to understand all the intricate moving parts that make up the whole. And there's no better way to do that than to work inside them.

**HBR Reprint** R2402A

# EMBRACING AN AI-FIRST MINDSET

## THE KEY TO THRIVING IN THE AI ECONOMY

In the rapidly evolving AI-driven landscape, enterprises must adopt an AI-first mindset to remain competitive and seize growth opportunities. Embracing AI as a core strategic pillar offers a multitude of advantages, propelling businesses toward success in the AI economy.

**Unleashing Data-Driven Insights:** AI empowers enterprises to extract invaluable insights from vast data repositories. Leveraging machine learning algorithms, businesses can analyze patterns, trends, and customer behavior, leading to more informed decision-making and targeted strategies.

**Enhancing Operational Efficiency:** Automating routine tasks through AI streamlines operations, reducing manual errors and freeing up resources. This efficiency boost translates into cost savings and increased productivity, elevating the overall business performance.

**Personalizing Customer Experiences:** With AI-driven recommendation engines and personalized interactions, enterprises can deliver tailored experiences to their customers. This fosters customer loyalty, satisfaction, and long-term relationships.

**Predictive Analytics for Future Readiness:** AI-driven predictive analytics anticipate market trends, enabling enterprises to stay ahead of the competition. Businesses can proactively adapt to changing customer needs and industry shifts, ensuring sustained relevance and growth.

**Improved Risk Management:** AI enables enterprises to assess and mitigate risks more effectively. With advanced algorithms and real-time data analysis, businesses can identify potential threats and take preemptive measures to safeguard their operations.

**Driving Innovation and Creativity:** An AI-first mindset encourages a culture of innovation and creativity within the organization. By adopting AI technologies, enterprises can explore novel business models, products, and services, promoting a forward-thinking environment.

**Unlocking New Revenue Streams:** AI opens doors to fresh revenue channels through innovative solutions and market opportunities. Embracing AI-driven business models, such as data monetization and AI-powered products, allows enterprises to diversify their revenue streams.

An AI-first mindset is no longer a choice but a necessity for enterprises aiming to thrive in the AI economy. By harnessing the transformative potential of AI technologies, enterprises can gain a competitive edge, drive operational efficiency, and deliver exceptional customer experiences.

An AI-first mindset is no longer a choice but a necessity for enterprises aiming to thrive in the AI economy.

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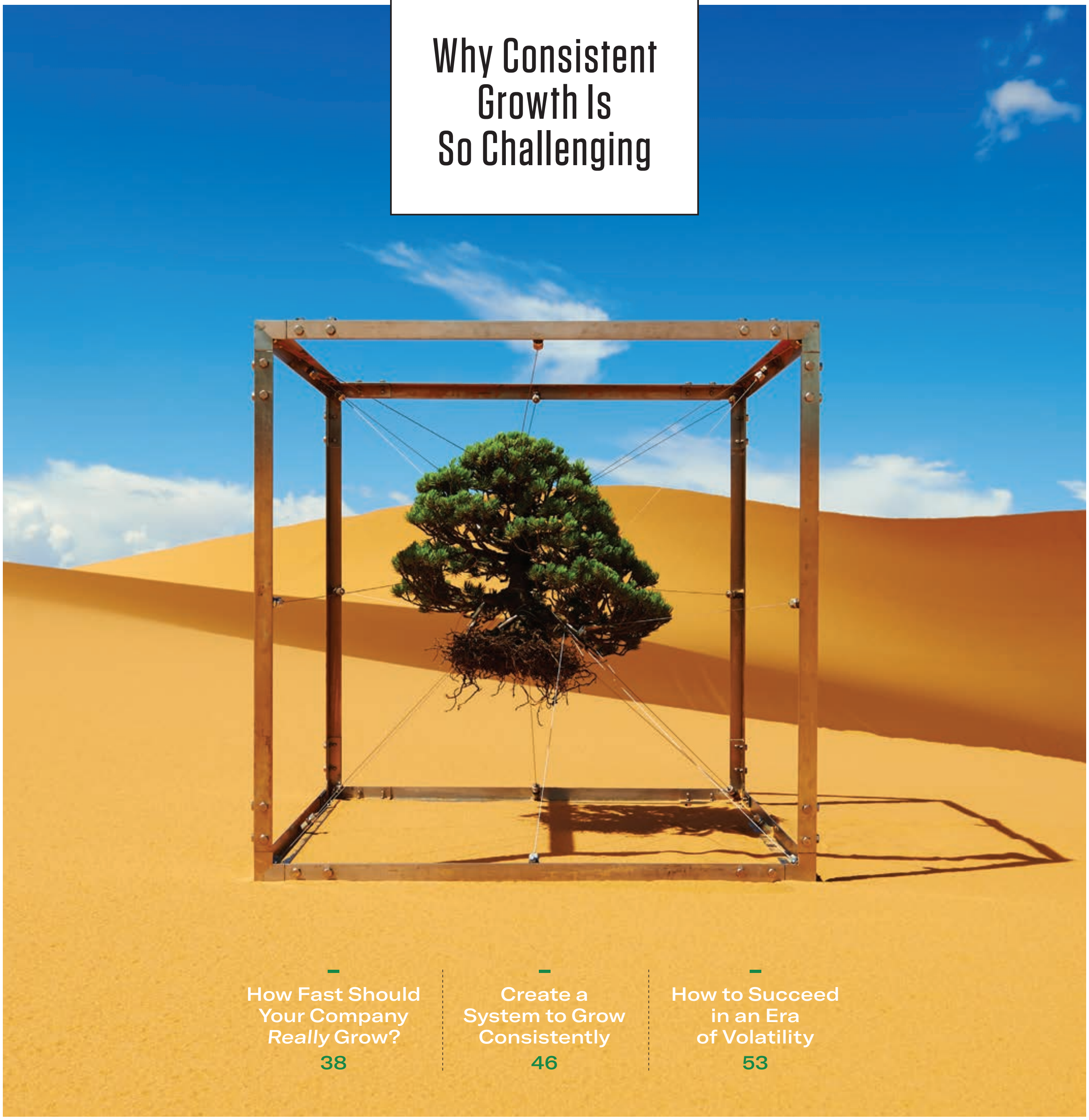
Spotlight

# Why Consistent Growth Is So Challenging



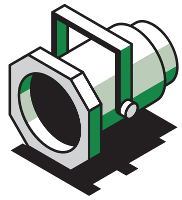


*Photograph by* AZUMA MAKOTO

AUTHOR

**Gary P. Pisano**
*Professor, Harvard Business School*

*Why Consistent Growth Is So Challenging*



SPOTLIGHT

# How Fast Should Your Company *Really* Grow?

## Why leaders should take a strategic perspective

**PERHAPS NO ISSUE** attracts more senior leadership attention than growth does. And for good reason. Growth—in revenues and profits—is the yardstick by which we tend to measure the competitive fitness and health of companies and determine the quality and compensation of its management. Analysts, investors, and boards pepper CEOs about growth prospects to get insight into stock prices. Employees are attracted to faster-growing companies because they offer better opportunities for advancement, higher pay, and greater job security. Suppliers prefer faster-growing customers because working with them improves their own growth prospects. Given the choice, most companies and their stakeholders would choose faster growth over slower growth.

While sustained profitable growth is a nearly universal goal, it is an elusive one for many companies. Empirical research that I and others have conducted on the long-term patterns of growth in U.S. corporations suggests that when inflation is taken into account, most companies barely grow. For instance, in an analysis of 10,897 publicly held U.S. companies from 1976 to 2019, my research associate Catherine Piner and I found that firms in the top quartile grew at an inflation-adjusted average of 11.8% per year, but those in the lower three quartiles experienced little or no growth (0.3%, 0.03%, and -0.5%, respectively). And the majority of firms in the top quartile were unable to sustain superior growth performance for more than a few years. Although challenging to achieve, sustained profitable growth is not impossible, however. In our analysis, we found that only about 15% of the companies in the top growth quartile in 1985 were able to sustain their top-quartile performance for at least 30 years.

Over the past two decades, I have tried to understand why some companies are more effective at sustaining growth and what senior leaders can do to navigate the organizational challenges it poses. In addition to quantitative statistical analysis of large samples of U.S. companies over multiple decades, I have conducted case studies of more than 20 companies in a variety of industries, including semiconductors, software, health care, life sciences, restaurants, airlines, alcoholic beverages, luxury goods, apparel, hotels, and automobiles. I've also gleaned additional insights from my experience consulting for (and serving on the boards of) companies ranging in size from start-ups to some of the world's largest corporations.

I have found that while the usual explanations for slow or minimal growth—market forces and technological

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*Photographs by* **JAMIE CHUNG**

changes such as disruptive innovation—play a role, many companies' growth problems are self-inflicted. Specifically, firms approach growth in a highly reactive, opportunistic manner. When market demand is booming, they go on hiring binges, throw resources at developing new capacity, and build out organizational infrastructure without thinking through the implications—for example, whether their operating systems and processes can scale, how rapid growth might affect corporate culture, whether they can attract the human capital necessary to deliver that growth, and what would happen if demand slows. In the process of chasing growth, companies can easily destroy the things that made them successful in the first place, such as their capacity for innovation, their agility, their great customer service, or their unique cultures. When demand slows, pressures to maintain historical growth rates can lead to quick-fix solutions such as costly acquisitions or drastic cuts in R&D, other capabilities, and training. The damage caused by these moves only exacerbates the growth problems.

Sustaining profitable growth requires a delicate balance between the pursuit of market opportunities (demand) and the creation of the capabilities and capacity needed to exploit those opportunities (supply). To proactively manage that balance, companies need a growth strategy that explicitly addresses three interrelated decisions: how fast to grow (the target rate of growth); where to seek new sources of demand (the direction of growth); and how to amass the financial, human, and organizational resources needed to grow (the method of growth).

Each of those decisions involves trade-offs that must be considered in concert with a company's overall business strategy, its capabilities and culture, and external market dynamics. (See the sidebar "The Perils of an Unintegrated Growth Strategy.") My rate-direction-method (RDM) framework highlights the critical interdependencies between decisions that are all too often made separately. Using the framework to illuminate the trade-offs, companies can create a balanced growth strategy.

## Rate: What Is the Right Pace of Growth?

The answer to this question seems obvious: as fast as possible. But taking a strategic perspective means that companies choose a target growth rate that reflects their capacity to effectively exploit opportunities. Growth is a strategic choice with implications for a company's operating processes, financing, human resource strategy, organizational design, business model, and culture.

In finance, the concept of a sustainable growth rate is well understood: It is the fastest a company can grow without having to sell equity or borrow. But talent, organizational know-how, operational capabilities, management systems, and even culture are also resources required to produce goods and services, and they, too, can become bottlenecks constraining growth. A competent CFO will keep a company from growing faster than its financial resources will allow. Unfortunately, CEOs and leaders of other functions often do not apply the same disciplined thinking to nonfinancial resources (which constitute the vast majority of a firm's value). For example, rapidly growing companies may downplay gaps between what their staffing levels, management capabilities, and operating processes can deliver and what is required to meet demand, seeing them as transitory "growing pains." This approach can trigger a vicious circle. Shortfalls in critical capabilities can lead to quality and other operating problems, which in turn become a drain on already-stretched resources. With

**IDEA IN BRIEF**

**THE PROBLEM**

*Sustained profitable growth is a nearly universal corporate goal, but it is an elusive one. Empirical research suggests that when inflation is taken into account, most companies barely grow at all.*

**THE CAUSE**

*While external factors play a role, most companies' growth problems are self-inflicted: Too many firms approach growth in a highly reactive, opportunistic manner.*

**THE SOLUTION**

*To grow profitably over the long term, companies need a strategy that addresses three key decisions: how fast to grow (rate of growth); where to seek new sources of demand (direction of growth); and how to amass the resources needed to grow (method of growth).*

no time to design and install systems adequate to handle the growth, companies often attempt to "catch up" through massive hiring and infrastructure spending and other stopgap measures. Worker burnout and attrition are not uncommon. These firms find themselves with a patchwork of suboptimal systems, an unwieldy infrastructure, an exhausted workforce, and a tarnished reputation in the market. And the so-called growing pains turn out to be not so temporary.

A case in point is Peloton. During the pandemic, it reacted to the surge in demand for its exercise bikes and treadmills with a furious effort to expand manufacturing capacity and distribution. The expansion pushed the company's supply chain beyond its capabilities, which led to quality and customer service problems (including two recalls). The cooling of pandemic-fueled demand left the company with a bloated cost structure.

The right strategy for many firms may be saying no to faster growth—even if the opportunities are tempting in the short term. Pal's Sudden Service, a quick-serve restaurant chain with 31 outlets in the southeastern United States that Francesca Gino, Bradley Staats, and I studied, is an example of a company that has taken an exceptionally disciplined approach to growth. Founded in 1956, Pal's has eschewed the rapid expansion of outlets favored by many fast-food chains. Since 1985, when it opened its third outlet, it has added, on average, less than one new restaurant per year and it has never opened more than one restaurant in any year. Pal's boasts one of the highest revenues per square foot in the industry: $2,500 versus $650 for the typical burger chain. In an industry where scale economies are critical, the chain's excellent financial performance is surprising. A key ingredient to its success is its operating system, which is designed around lean manufacturing principles. Every process, from where to place the ketchup on a burger to how far to open a hot dog bun, has been carefully studied and specified. The company's menu is limited to a few basic items such as hamburgers, hot dogs, sandwiches, fries, and milkshakes.

With such a profitable and rigorous operating model, and seemingly unlimited demand in the United States for its products, a massive and lucrative expansion would appear to make sense. Yet the chain's leadership recognizes that a unique aspect of its model places a limit on how fast it can grow:

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High demand potential does not translate into profitable growth unless the firm has or can develop the capabilities needed to meet that demand.

its obsession with quality. Pal's has an extremely low rate of order errors: one error per 3,600 orders versus one error per 15 orders for the industry. That level of quality not only allows Pal's to save costs on food waste, which is critical in an industry with low margins, but it also enables the company to have one of the fastest throughput times in the industry. In a drive-through operation, order errors cause delays for every customer down the line. Pal's is able to serve more customers at peak hours, and that translates directly into higher revenue.

But the emphasis on quality also requires significant investment in resources—in particular, for extensive training and building the right culture in the workforce. At Pal's, workers are trained for weeks on each process and must pass a certification test before they can make products for customers. They must be recertified periodically to ensure that their skills are up to par. All Pal's stores are managed by "owner-operators" (who are not actually owners but whose compensation is tied 100% to their individual store's profits). Pal's believes that these managers are critical to nurturing the culture of quality and to training and developing talent. All manager candidates are put through an extensive screening process, and selected candidates, regardless of their prior industry experience, attend the company's leadership-development program. It normally takes candidates three years to be allowed to run their own store. The company's growth strategy is dictated by the availability of store managers: When Pal's has a candidate ready, it will open a new store.

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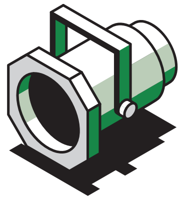
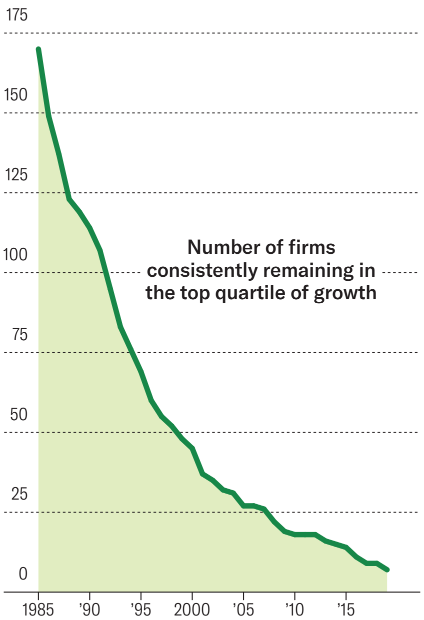


## Sustainable Growth Is Elusive

To evaluate patterns of growth performance over time, we identified 680 companies for which we could calculate 10-year rolling average growth rates for at least 25 years during the period 1985 to 2019. In this sample, we identified the top quartile of growers in 1985 according to their previous 10-year rolling average and then examined the performance of those 170 firms over the subsequent 34 years. Not surprisingly, most fell out of the top quartile over time.

Of the original 170 companies, only seven (Walmart, UPS, Southwest, Publix, Johnson & Johnson, Danaher, and Berkshire Hathaway) appeared in the top quartile for all 34 years. Only 19 companies stayed in the top quartile for at least 30 years. Companies appeared in the top quartile for an average of 19 years. When we repeated this analysis using three different starting periods (1990, 1995, 2000), the general patterns were the same.




Notice the difference between the Pal's approach to growth and that of most other companies. Pal's does not set a growth goal on the basis of market potential or target financial returns. Instead, it recognizes its critical bottleneck resource—in this case, store managers—and paces growth according to the rate at which it can develop them. This approach has almost certainly meant slower growth in number of stores and revenue, but it has been critical to maintaining the company's unique operating model and its superior financial performance.

In my research, I've found that most companies think of growth potential in terms of "demand side" factors: external trends, market share, and other metrics such as total addressable market. These are important, of course, but they are only half the story. Supply-side constraints matter just as much: High demand potential does not translate into profitable growth unless an organization has or can develop the capabilities needed to meet that demand. So a strategic perspective on growth means analyzing the company's sustainable growth rate (considering all resources, not just money) and then thinking through the trade-offs inherent in faster or slower growth. For instance, there may be excellent strategic reasons to grow more quickly (for example, a market where first-mover advantages or network effects are present), but that faster growth must be weighed against the potential harm it creates.

## Direction of Growth: Scale, Scope, or Diversify?

Since demand ultimately fuels growth, selecting which market opportunities to pursue is a critical component of a company's overall growth strategy. Some companies seek growth by scaling in their core market. Others broaden their scope into adjacent products and services. Still others diversify into a range of seemingly unrelated industries. Which strategies are most profitable over the long term has long been a topic of hot debate, and my research suggests there is no simple answer.

Let's return to the analysis of nearly 11,000 companies from 1976 to 2019. Among the fastest long-term growers, some companies—such as Walmart, UPS, Southwest Airlines, and Publix—grew by scaling in their core markets, replicating their model in new geographic markets, or adding ancillary services closely aligned with their core service operations. Others—such as Danaher, Johnson & Johnson (for which I have provided consulting services in the past), and Berkshire Hathaway—took the opposite approach in pursuing diversification strategies.

How should companies decide which path to take in their pursuit of growth? It is tempting to think about such choices as simply a matter of identifying and exploiting immature, unsaturated markets with rapid overall growth potential. While market dynamics matter, there are other factors to consider. For example, from 1980 to 2019 the average compound annual growth rate of the domestic U.S. travel market (in terms of "revenue passenger miles," or the number of miles traveled by paying passengers) was a modest 5.3%. Southwest Airlines, however, enjoyed a brisk average CAGR of 15.3%. It accomplished that by developing unique operating capabilities (such as fast turnaround of aircraft) that enabled it to efficiently provide point-to-point service on routes that traditional competitors either ignored or served only through inconvenient hub-and-spoke models.

I've found that even in higher-growth industries, the distribution of

## The Perils of an Unintegrated Growth Strategy

B.good, a quick-serve restaurant founded in 2004, offers a cautionary tale about the need to make rate, direction, and method choices in an integrated manner when crafting a growth strategy. As a case study by Francesca Gino, Paul Green Jr., and Bradley Staats reveals, B.good has an innovative value proposition: Unlike most companies in the industry, B.good makes its burgers and other fast-food offerings using fresh, local ingredients. In addition, it cultivates a "family" culture for employees and customers: The founders got to know many employees and often reached out to them on special occasions or in difficult circumstances. Frontline employees were encouraged to greet customers by name and recommend members of their own families for jobs at the company.

B.good's value proposition and its focus on culture created challenges operationally and organizationally. The focus on "fresh and local" and the unique cultural model made franchising—which requires more standardization and less corporate control over human resource decisions—and geographic expansion more difficult.

For the first eight years of B.good's existence, it pursued a growth strategy compatible with its constraints: It opened only eight restaurants, all in the immediate Boston area and all completely company-owned. It had a cohesive growth strategy aligned with its core value proposition.

But then the company changed its growth strategy. It began to add outlets very quickly, a rate decision. By 2019, it operated 69 stores across the Northeast, South, Midwest, and Canada—a direction decision. And to finance growth, it began to sell franchises, a method choice; by 2019, 20% of its outlets were franchised.

In the aftermath of this change in strategy, the company struggled. Every time it expanded into a new geography, it needed to develop a new supplier base to fulfill its fresh and local promise. And every franchise selection required a time-consuming process to make sure the franchisee shared the founders' philosophy. The company's leaders should have realized that they faced a strategic choice: Either align its growth strategy with its core value proposition—which would have meant slower growth, less-aggressive geographic expansion, and less franchising—or change its value proposition and culture to enable faster growth, broader geographic expansion, and more franchising. They tried to have it both ways, and it didn't work. As of 2023, the company was down to just 13 outlets, 11 of which were in metropolitan Boston and one each in Maine and New Hampshire.

growth rates tends to be highly skewed, with a small set of firms accounting for the lion's share of industry growth. Consider the semiconductor industry. From 2015 to 2020, the top 10 semiconductor companies grew at an average annual compound rate of 9.2%. However, excluding the two fastest growers during this time (Nvidia, with a CAGR of 27%, and Taiwan Semiconductor, with a CAGR of 12.3%), the average dropped to 6.5%. Nvidia's rapid growth stems from its capabilities in the design of powerful graphics processing units, or GPUs. Those capabilities helped Nvidia capture a 61% market share in the fast-growing market for chips used to power machine-learning and other artificial intelligence applications; the next closest rival is Intel, with a 16% share. The AI chip market offers high growth potential only to companies with the R&D capabilities to compete there—for others, it is not a particularly attractive opportunity.

The basic question that companies must address is: In which markets do our capabilities and other unique resources (such as brand, customer relationships, reputation, and so on) provide us with a competitive advantage? A scale-focused strategy will tend to revolve around deep, market-specific capabilities. Think about pharmaceutical companies. The capabilities that enable them to grow are their scientific prowess in drug discovery, understanding of clinical development and regulatory approval processes, and access to payer networks. While incredibly valuable for scale-based growth in pharmaceutical products, none of those capabilities transfers readily to other industries (including medical devices and diagnostics, which have different regulatory paths and market-access dynamics).

Successful scope strategies, in contrast, require the development of broader, general-purpose capabilities and resources that can be leveraged across market segments and lines of business. In some industries, brand equity is the basis for scope expansion. Consider the potent role that brand has played in Nike's explosive growth over the past several decades as it expanded from being a maker of running shoes to a powerhouse across the sports apparel and equipment industry. In other cases, broad technological assets and capabilities open doors to new businesses. While conducting research on diversification patterns across more than 28,000 companies from 1975 to 2004, my colleague Dominika Randle and I analyzed patterns of patent citations to understand the degree to which a company's technological capabilities were broadly applicable across markets. Our analysis showed that the companies with the most general-purpose technological assets (those that could be applied across multiple industries) were the most likely to diversify.

## Method of Growth: How to Grow?

All growth requires access to new resources: financial capital, people and talent, brand, distribution channels, and so on. But there are various ways companies can choose to obtain them. A classic choice leaders face is how much to focus on organic growth versus growth by acquisition. Companies must also make decisions about how to finance growth, whether to vertically integrate or outsource to or partner with other firms, and whether to franchise or build out company-owned operations.

Obtaining any growth-fueling resource—money, people, brand, access to capabilities, and so on—involves trade-offs. Building up resources organically can take time (and thus result in slower growth), but those internally developed resources can often be more precisely aligned and integrated with a company's unique value proposition. Partnering and outsourcing might provide a faster route to growth, especially for younger companies trying to bring products to market, but it can mean ceding control of activities critical to the value proposition.

Method decisions are tightly connected to choices about the rate and direction of growth. Consider the case of Virgin Group, which my colleague Elena Corsi and I studied. The company's growth strategy is to expand into new markets and industries where the Virgin brand can drive customer acquisition. The company's leaders consider the Virgin brand—along with fresh approaches to providing high-quality customer service—to be the firm's critical resource. In many ways, Virgin's rate of growth depends on the rate at which the brand can be monetized in new markets.

The privately owned Virgin Group has increasingly used licensing of its brand to drive growth. To raise the capital needed for acquisitions to enter new markets, Virgin divests existing businesses. In such cases, it generally strikes a licensing agreement with the acquirer for the right to use the Virgin brand. As a result of its aggressive use of licensing, Virgin Group's most valuable asset, the Virgin brand, is increasingly under the control of organizations of which it is not a majority owner and over which it can exercise only limited control. This creates risks to the brand, even with vigilant monitoring and strict contractual clauses. While disputes between Virgin and its licensees are rare, they have happened. Looking at Virgin's growth strategy through the rate-direction-method lens helps us understand the trade-offs the company has made. The licensing-driven method of growth enables broader diversification and faster growth, but it creates brand equity risks. A lower-risk approach would be to use less licensing (for instance, let the Virgin brand be used only in companies in which Virgin Group owns a majority share), but this would most likely mean less diversification and less growth.

## What Makes a Great Growth Strategist

As companies grapple with the central question of how fast to grow, they'll need leaders who understand the key decisions to be made and their inherent trade-offs. Good growth strategists are keenly aware of the nonfinancial constraints—such as systems, processes, human capital, and culture—on their company's sustainable growth rate. They know that growing faster than capabilities dictate is possible in the short term but that doing so over the long term can cause lasting damage to reputation and culture. Good growth strategists do not fall into the trap of thinking they can grow fast now and fix things later. They recognize that more-measured growth over a sustained period will lead to much better financial results than explosive growth for a short period of time.

Great growth strategists, however, go beyond avoiding traps and accepting trade-offs. They proactively look for ways to augment the resources that constrain short-term growth and focus on the continuous accumulation of new resources and capabilities that open options for future growth, either through scaling in core markets or through entry into other markets. They see investments in training, processes, systems, technology, and culture as means to break growth bottlenecks and raise a company's sustainable growth rate. They are comfortable with leading organizational change. Finally, they are obsessed with human capital. They recognize that among the many resources shaping a company's growth potential, the quality, talent, and mindset of its people are the most important. Great growth strategists realize that sustained profitable growth is never going to be easy, but without the right human capital, it will be impossible.

**HBR Reprint** S24021

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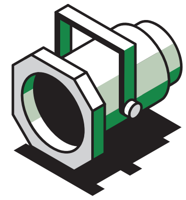

# Create a System to Grow Consistently

## Five elements can move you beyond episodic success.

**DELIVERING SUSTAINED** growth is one of the hardest things a company can do. A brilliant idea or product innovation can create a burst of episodic growth, but few companies demonstrate growth year in and year out, especially amid the disruptions and uncertain economy we've experienced during the 2020s. Some companies have cracked the code on sustained growth, however, while realizing the elusive goal of knowing precisely where next quarter's revenue will come from.

To better understand the value that can be created when firms grow consistently, we and our colleague Brett Davidson conducted a study of 2,142 publicly traded U.S. companies with annual revenues of more than $200 million. We divided the companies into quartiles based on their five-year compound annual growth rates (CAGRs) over the period 2018 to 2022 and focused on the top quartile of growth performers. We rank-ordered those 535 companies—we call them *growth leaders*—by revenue growth for each year within the period and identified the ones that were in the top half every single year. That's remarkably consistent growth, and for that reason, we call those 234 companies *growth champions*.

Both groups in the top quartile had similar average CAGRs over time, but the growth champions demonstrated a consistency that was significantly more valued by the market, earning an average valuation of 4.2 times revenue versus 2.8 for growth leaders and 1.7 for companies in the lower three quartiles.

Next, we sought to understand what allowed the growth champions to show such steady upward trajectories in revenue. Was it their business models? Were they simply faster at putting differentiated solutions in customers' hands? Did acquisitions play a role in propelling consistent growth? Those factors mattered, of course, but our study confirmed what we have observed in our work for many years: The highest-performing organizations invested in a *growth system,* an integrated collection of capabilities and assets that drove both short-term and long-term growth.

This approach is fundamentally different from the way companies tend to manage growth. Most are stuck on a treadmill, searching for growth in places where they have no fundamental advantage (or, worse, are disadvantaged). So even when they manage to increase revenues the cost is often prohibitive. At the extreme, companies become desperate for growth, viewing almost every customer acquisition as a high-stakes endeavor. They squeeze out short-term growth by extending price discounts, managing the endless churn of customers with new promotions, pushing out innovations that wind up cannibalizing existing revenue, or launching dozens of initiatives that they know are underfunded or in target areas where they don't have a differentiated offering. In the process, they become weaker competitors.

To deliver consistent growth over time, companies must get off the treadmill, which invariably requires a big mindset shift: Leaders need to focus less on tactics for achieving short-term growth and more on building a fundamental engine of long-term growth.

*Photographs by* RACHEL SUSSMAN

Growth champions demonstrated a consistency that was highly valued by the market, earning an average valuation of 4.2 times revenue.

## The Five Components of a Growth System

Our research—which includes interviews and case studies—shows that a growth system has five components. We describe them below through the lens of successful companies—Toast, IKEA, Vertex, Adobe, and Roblox—that have built effective growth systems. No company we studied has developed all five elements perfectly, but these companies have a keen sense of how to improve their growth system over time.

**Define a compelling customer outcome.** The foundation of a growth system is a differentiated and compelling customer offering—a clear, relevant, and unique promise that defines what you will deliver and to whom. Consider Toast, a leader in fintech that has achieved growth consistency by creating payment solutions specifically for restaurants. Toast is dedicated to helping restaurant employees delight their guests by focusing on food and hospitality instead of payment logistics. It continually hones and improves its offering, with innovations such as self-service check-out kiosks and loyalty-program-management technology that makes it easy for restaurants to design customer reward programs and launch targeted email-marketing campaigns to build engagement. By designing its growth system around a needed, differentiated solution for restaurants, Toast has carved out a strong position in a crowded market and has made it extremely difficult for generic payment-solution providers to encroach on its turf.

**Architect the right capabilities.** Growth champions create highly specific blueprints that detail how all the capabilities of their growth system work together to create products, solutions, and services that deliver the desired customer outcomes. These blueprints are much like those for complex buildings, specifying all the resources, technology, data, and processes required to do the work. Growth champions invest heavily in these capabilities, taking resources from other places as necessary. They also rely on their ecosystem business partners to help build out key elements of the blueprint. These companies spend a significant amount of executive energy on the design and implementation of this system; it is what defines the organization, rather than the products and services that come and go.

IKEA has developed a clear growth system featuring highly specific capabilities that deliver the promised outcome of home furnishings that everyone can afford. Its system includes superior design capability coupled with deep knowledge about how to control cost and price. Nearly every aspect of a piece of furniture—from its dimensions to material choices to the customer assembly process that's integral to IKEA's efficient flat packaging—is carefully modeled as part of the design process. IKEA's materials-procurement process balances a short-term focus on meeting cost objectives with a long-term focus on sustainability. To improve the design of its products, the company has invested in a "privileged insights" capability to learn how customers go about their daily lives (including working with customers to glean insights from cameras placed in their homes) so that it can create innovative offerings aimed at solving a wider set of customer challenges. Another linchpin is IKEA's store set-up capability that improves customers' browsing and shopping experience by efficiently organizing collections of merchandise. Thanks to these carefully architected capabilities, IKEA has expanded its offering globally while growing sales with existing customers.

**Create the right operating model.** Operating models constrain growth when they promote silos around key functions such as marketing, sales, product development, pricing, and customer service. In too many companies, each function creates its own operating model, which impedes collaboration. To build the kind of integration necessary in a growth system, companies must rethink how they organize the most important parts of their businesses, setting up outcome-oriented, cross-functional teams with the right expertise.

Vertex is a global biotech firm that has grown by delivering on its purpose to provide novel treatments in specialty disease areas such as cystic fibrosis, diabetes, sickle cell anemia, and acute pain. It has designed a novel end-to-end operating model that breaks down silos across internal groups (R&D, clinical delivery, and commercial delivery, for example) and external constituents (academic researchers, smaller biotech firms, patient advocacy groups, hospitals, insurers, and manufacturing partners) to accelerate drug discovery and development. It continually invests in and tunes the model as the company grows. For example, as Vertex expanded globally and became more decentralized, it created new ways to promote innovation,

**ABOUT THE ART**

*Rachel Sussman's project* The Oldest Living Things in the World *combines art, science, and philosophy to represent vast timescales. Her photographs of organisms over 2,000 years old capture the living history of our planet—and what we stand to lose in the future.*



*Japanese Cedar (2,180 to 7,000 years old; Yakushima, Japan)*

SPOTLIGHT

*Why Consistent Growth Is So Challenging*

*Huon Pine (10,500 years old; Mount Read, Tasmania)*

**Growth champions build next-generation capabilities to engage with and learn about their customers, from ordering and delivery to postsale interactions like warranty support.**

such as tournaments, training programs, and facilitated lectures by leading scientists. To improve its breakthrough cystic-fibrosis treatments, it works with health care providers to optimize care pathways from hospital centers into patients' homes, creating better patient experiences and outcomes. To scale drug production while maintaining quality, it works with select manufacturing partners to develop continuous manufacturing technology (the first such program to secure FDA approval). Vertex's operating model also includes a culture that promotes breaking the status quo and learning from failure, which is central to developing new treatments, delivering better patient outcomes, and propelling growth.

**Renew insights continuously.** Growth champions anticipate how trends will affect customers and revenue generation, now and in the future. They realize that timing matters: Spotting the right trends early is necessary to make investment plans and shift product portfolios. But make no mistake: We're not talking about generic trend analysis. Growth systems aren't unidimensional or temporal; they do not rely on dutiful, check-the-box customer-satisfaction surveys. Instead, they are built on integrating direct exchanges with customers as part of the value delivered, including open-ended dialogue with people about their likes and dislikes across the product development and use cycle. Companies that build these next-generation insights capabilities look for all opportunities to engage with and learn about their customers, from the ordering and delivery of products and services, to postsale interactions like warranty support. Growth-system companies use those insights to find the "white space" where opportunity lies, improve features, fine-tune service models, and understand what competitors are doing to capture mindshare and wallet share.

Adobe's system of customer engagement is dynamically linked to the experience of using the firm's software. Many Adobe products, such as Photoshop, offer tremendous functionality, but their complexity can be daunting to users. So Adobe has embedded technology that provides instant feedback and tips for users according to what problem they are trying to solve. At the same time, Adobe learns where customers are spending their time, what unique problems they are bringing to the software, and what capabilities they may need in the future to solve them. Our study showed that simply identifying insights—using market research, for example—is not typically a successful path to growth. Companies that build processes to engage customers not only learn more about their users but also create the type of value that drives real loyalty and translates directly into growth.

**Measure return and reallocate investment.** Growth champions allocate resources to capabilities that help them achieve differentiated customer outcomes, and they reinvest the profits in those resources. They also carefully measure the relationships between inputs (investments) and outputs (performance). While key metrics include R&D growth, asset growth, revenue growth, margin growth, customer satisfaction, return on invested capital, and total shareholder returns over a five-year time period, one of the most important metrics for these companies is simply how much they are funding their growth system. Because budgets tend to be based on a year-over-year process and closely tied to a siloed functional model, most companies struggle to meaningfully shift their investments to the most important capabilities for growth. To propel the growth system, they need to ask, How much of our budget is going to those areas? Are we making progress toward the goals of each part of our system?

The video game and content-development platform Roblox systematically measures its progress toward its goal of connecting one billion people globally. The company makes investments in R&D that enable individuals, social influencers, marketers, and celebrities to create ever-expanding forms of content. Event producers use Roblox to create virtual concerts to promote their bands' live tours, and sponsors can place advertisements in them. Celebrities and social influencers can create personalized, lifelike 3D avatars enabled by the latest AI. Video game developers can create calendars, community forums, and in-platform user-to-user call features to expand engagement. Roblox also looks for ways to embed its platform in devices with active gamer populations, such as Sony PlayStation, and in emerging domains such as virtual reality headsets. When people use these assets, they generate in-game, easily convertible currency, called Robux. That allows Roblox to connect the number of daily active users and engagement hours with revenue growth. And that, in turn, helps the company decide where to make its next wave of growth investments.

## Putting It All Together

Designing an all-encompassing growth system is not easy. A prime example of a company that has demonstrated sustained success by creating such a system is Salesforce, one of the growth champions in our study. Salesforce is laser-focused on *customer outcomes,* diversifying its offerings to respond to an evolving market while grounding innovation in what is important to its customers—something some rival tech companies have been slower to do.

Over the past decade, Salesforce has supplemented its flagship CRM *capabilities* with cloud-computing and AI services, while also acquiring Tableau (visual analytics) and Slack (real-time messaging). Salesforce continually collects *customer insights* through its IdeaExchange platform, which allows users to propose new features or changes to products. Trailhead, Salesforce's learning platform that engages with users through gamified training and resources, has been instrumental in building a knowledgeable, proficient user community, fueling innovation and driving revenue. Salesforce's basic *operating model*—customers pay subscription fees, with charges increasing the more they use its software—aligns top-line growth with customer success. Salesforce aims to make it easy for customers to use its products, and as they do, revenue per customer and the number of multimillion-dollar accounts naturally grows. What's more, Salesforce's revenue is remarkably consistent, thanks to multiyear subscription agreements. The software-as-a-service (SaaS) model also naturally generates data on how and how much customers are using the software—a key metric for *measuring ROI.* The entire growth system creates network effects that lead to not only higher sales of new products and more cross-selling but also a high retention rate—a number Salesforce publishes to reinforce its commitment to customer success.

So where to start? In studying companies that have successfully built elements of a growth system, we observed four behaviors that help create momentum. First, growth-system companies have the full support of the CEO, who is often the person instigating the work and who plays a vital role in getting companywide buy-in. They also have real collaboration among executive team members, who are committed to building a system together rather than just focusing on their individual areas.

Second, they acknowledge that growth systems require a multiple-year journey to build and scale. CEOs and executives prioritize investment in the system even as they strive to meet near-term targets. As Frans van Houten, a former CEO of Philips, says: "We talk about the need to both perform and transform. If you only transform but don't perform, you have no here and now. If you only perform but don't transform, you have no future. Therefore, in our scorecards we measure both. In our reviews we talk about both. And the targets that I give to all my executives...always [include] some transform objectives."

Third, these companies create a three- to five-year timetable, listing milestones and deliverables against the blueprint, and they inspire their teams to create the most-differentiated and -valuable capabilities to propel the system forward over the long term. This is not a financial forecasting exercise; it's a well-conceived road map of how the portfolio of products and services will evolve and what capabilities must be developed to deliver on current and future growth targets.

Lastly, growth-champion leaders provide continual and dedicated support. This work can't be a side job for a few high performers; it must be a central focus of the company, with a management structure that supports it and an ongoing cadence for reporting to the leadership team on progress.

**EXECUTIVES ARE EXHAUSTED** from the ongoing search for growth. If your team spends its time tactically eking out revenue increases, it's time to step back and understand the power of a growth system. Great innovation can create the next market, and great insights will uncover new opportunities. Companies should not and cannot wait for markets to be defined or disrupted. Even when products and services become outdated, the system's capabilities can be extended or repurposed to shape and transform your future.

**HBR Reprint** S24022

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# How to Succeed in an Era of Volatility

## Invest in prediction, adaptability, and resilience.

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ONE COLD, HARD truth laid bare by the pandemic is how vulnerable a business can become when strategic foresight and operational flexibility are low on the list of priorities for boards and leadership teams. Many companies were caught flat-footed when the number of Covid-19 cases in the United States began to mount, but H-E-B, the Texas-based regional supermarket chain, was a notable exception. In mid-January 2020, H-E-B began putting out feelers across its network of global suppliers, and it reached out to retailers in China to learn about what the early weeks of the pandemic looked like there and what lessons they had learned.

*Photographs by* AZUMA MAKOTO

H-E-B quickly recognized that the pandemic would require a full-scale response. Fortunately, the company's director of emergency preparedness (yes, H-E-B already had one) was experienced in crisis management, having overseen emergency plans to keep stores open during hurricanes to support shoppers. H-E-B even had a playbook for managing through an influenza outbreak, refined after the swine flu was detected in Cibolo, Texas, in 2009.

Within a few weeks of the first U.S. Covid case, the company was running tabletop simulations of how a large-scale pandemic would affect its employees, supply chain, and operations overall. Early on, the supermarket trimmed daily store hours to provide more time for stocking shelves, which were sometimes empty by the end of the day. H-E-B, which has its own meat plants, quickly pivoted to 24/7 operations for its top 50 meat products, allowing the company to ship significantly more meat to its supermarkets. Eggs were in short supply, so H-E-B worked with one of its beer distributors to pick up eggs from a wider geographic area and deliver them to H-E-B stores along with its regular cargo. By all accounts, H-E-B employees remained committed to hard jobs in a very challenging time. When shopper volume just kept climbing, H-E-B asked employees on its corporate teams if they would pitch in and take shifts in stores and warehouses—and 800 people signed up.

The way this regional supermarket confronted the pandemic isn't just a bit of business heroism—it's also an illustration of how strategy needs to change as the world does. Over the past 30 years we've lived through a remarkable era of macrostability, characterized by largely peaceful geopolitics, generally falling interest rates, expanding credit markets, and moderate inflation. During that time, five new trends in the business landscape emerged: globalization, capital superabundance, the declining cost of distance, labor superabundance, and, underlying all those, technology-led innovation. Winning companies adapted their organizations to the trends, embracing such mantras as "Move fast" and "Adapt or die" to create enormous amounts of value.

We've now entered a new era in which new rules apply. It's a time of post-globalization, capital rationalization, spatial dispersion, shrinking workforces, and dependence on automation. Meanwhile, technology-led innovation is only accelerating and compounding. In this environment, the intuitions that leaders have developed over the past few decades will cease to be useful—and

**ABOUT THE ART**

*The Japanese artist Azuma Makoto photographs his 50-year-old bonsai tree in an open steel frame in locations around the world to explore the idea of beauty and vitality in unexpected landscapes.*



the shape of opportunity and risk will be entirely different.

If leaders want to continue creating value in the era of volatility, they must still focus on adaptability. But they'll also need to revive strategies that boost investment in two other capabilities that have fallen out of favor in recent years: resilience and prediction. Ultimately, every company will need a strategy that allocates time, resources, and energy to all three capabilities.

Over the past few years, we've had strategy dialogues with leading companies around the world, during the course of which it became clear that conventional strategic formulations aren't well suited to the disruptions of the era we've entered. One source of inspiration for leaders? The world's financial investors, who are free of the obligations of managing individual businesses day-to-day and can take a broad perspective on major shifts in the economy and adjust their portfolios accordingly.

The starting point for such a perspective is a sharp appraisal of where you are today. What are your various exposures—that is, the risk and reward potential—of key investments in your portfolio? Where are you long, with bets on rising value, and where are you short, betting that less value will be generated because of limited opportunities? Are these positions deliberate and consistent with your predictions about the future, or have they built up over time without intention or focus? To navigate the uncertain landscape and continue to generate sustainable growth, business leaders will need to develop growth strategies that are both pragmatic and powerful.

## A Three-Part Approach

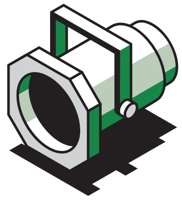
The era of volatility requires that companies integrate capabilities for prediction, adaptability, and resilience in a manner uniquely tailored to their circumstances. Let's consider each capability in turn.

**Prediction.** This capability involves generating beliefs about the future of your industry with enough precision and conviction to create opportunities for competitive advantage. For example, leaders may not know the full contours of the coming geopolitical landscape, but they're sure to face a more fractured world of sharper rivalries, and that reality will shape parts of the macroeconomy. Companies must constantly work at developing scenarios, testing them against their risk and reward potential, and selecting a strategy that will adjust their exposures over time. The more asset-intensive a company is or the more fast-paced its competition, the more it will need good predictive capabilities. Private equity firms, for example, need superior prediction capabilities to generate detailed investment theses: A particular investment will produce a specific rate of return if and only if A, B, and C are all true. Most energy companies also require strong prediction capabilities, as do some leading telecom companies.

Consider the case of Reliance Jio, which accurately predicted the shifts in India's mobile-phone-services market toward ubiquitous smartphones and high data consumption. In 2016, having recognized the potential for greater smartphone penetration despite a landscape crowded with well-established and well-funded incumbents, the company predicted that demand would increase if smartphones were made more affordable. As a result, it launched a series of budget-friendly smartphones, targeting the mass market and offering Indian customers features they were keen to have but often couldn't afford. Jio also had the foresight to invest strategically in building a robust 4G network across the country ahead of the incumbents. By offering customers high-speed and affordable voice and data connectivity, including in rural areas not served by incumbent companies, Jio was able to disrupt and capture a significant share of the market. It also anticipated the growing importance of digital services and content consumption on mobile devices and developed an ecosystem of news and entertainment offerings that helped further differentiate it from competitors.

**Adaptability.** Being adaptable means changing the business faster than competitors are changing. Most companies developed this capability during the recent era of macrostability, but they now need to refine it in key ways to grow in the era of volatility. By understanding where their current business has long or short exposures, for instance, leadership teams can track signals related to critical bets that might trigger a shift in strategy. Shockingly, financial investors often work harder to track such signals than corporations do. Many leaders also fail to recognize and capitalize on the signals coming from their front lines that only they have the ability to discern.

For dynamic early-stage industries, adaptability is required to survive; the most nimble companies can sometimes





rely on adaptability rather than prediction to navigate through changes in the environment. Large companies should be able to use adaptability to reap advantages at scale, but too often their size creates complexity that makes it hard to pick up important signals. Tuning in to these signals is the first step in identifying where you need to double down, initiate fresh innovation, or simply cut losses.

Satya Nadella famously demonstrated adaptability when he decided to commit Microsoft to cloud services. When Nadella became CEO, in 2014, going all-in on cloud services was far from the obvious move, but he saw signals that the company needed to adapt: Amazon's AWS was already moving forcefully to a business model anchored in cloud services and the underlying technology, and other enterprises, Netflix among them, were reshaping their respective industries by capitalizing on their own services.

Early on, Nadella committed the company to Microsoft Azure, its cloud-computing platform, which enables companies to build, deploy, and manage applications for services and provides developers with an array of powerful tools and resources. Office 365 was a key part of the strategic shift. Even though the company's desktop and enterprise business models were well-developed, with huge installed bases, Nadella chose to pivot to the cloud, which required enormous new investments in complex product engineering and architecture. That shift brought the company up against brutal new competitors and new dynamics, but getting ahead of the market has paid off for Microsoft: More than half of its revenue now comes from cloud services and properties, up from about one-third in 2020, amounting to $31.8 billion in the first quarter of fiscal year 2024. And cloud-based subscriptions for Office 365 deliver more-predictable recurring revenues than Microsoft earned using its previous business model. Microsoft has been able to diversify and expand into new sectors, including health care, finance, and manufacturing, where Azure is hosting advanced technologies such as AI, machine learning, and IoT.

**Resilience.** Companies with superior resilience survive shocks better than their competitors do. Many shocks that companies should prepare for (perhaps even most) are known to them, but too often leaders don't do the work of pressure-testing their chosen strategies and business models. During the past three decades of macrostability, companies were insulated from damage from shocks, and it became far too easy for them to optimize for short-term profits and avoid investments in resilience. That's partly because resilience can have deleterious effects on efficiency: It takes time and money to make the investments in redundant capacity, alternative supply chains, and critical inventories, all necessary to weather shocks.

Southwest Airlines has adopted a notable approach to resilience, with a target of hedging at least 50% of its fuel costs each year. The program hasn't changed Southwest's fundamental exposure, but by using financial instruments such as futures contracts and options to lock in prices for specific time frames, the company mitigates the risks to its business from spikes in jet-fuel prices. In 2022, as the battered airline industry began to return to profitability, Southwest's hedging saved the company $1.2 billion, according to industry analysts, boosting its operating margins above those of three major competitors. Investing in resilience takes commitment, a focus on the long term, and an ability to weather short-term turbulence: For example, when oil prices plunge, as they did from 2015 through 2017, Southwest risks losing money on its fuel-hedging program.

## Where to Start

How can leadership teams prepare for the new era? It's not an environment that favors small moves and a test-and-learn mindset. Instead, it requires that companies adopt an approach to strategy that integrates bold investments in the three capabilities of prediction, adaptability, and resilience. In determining how best to allocate your resources across the three capabilities, the following steps can help.

**Map exposures.** Companies can learn from hedge funds to simplify their understanding of their exposures and where they have long positions (where they've made larger and more strategic bets) or short positions (fewer and smaller bets or even none at all owing to limited opportunities). To determine where they are long, companies typically examine the concentrations of revenue, direct costs, and suppliers in their current business.

Consider a hypothetical agricultural equipment company we'll call AgEquip. Looking at revenue concentrations across its core customer segments and channels in various geographies, the company might quickly identify that it is long on Brazil, a key market for its equipment. Looking at exposures from a demand perspective, it might recognize that it is also effectively long on China, given the importance of that market to Brazilian farmers, who use

Many shocks that companies should prepare for are known to them, but too often leaders don't do the work of pressure-testing their chosen strategies and business models.

the company's equipment to produce soybeans largely exported to the Chinese market as feed for pigs.

Mapping exposure also means identifying where the business is short and then deliberately placing smaller strategic bets or choosing not to play. For instance, AgEquip might believe that innovation in data-analytics services for farmers is moving too slowly to become a high-growth area of its business anytime soon. The result of this mapping would be an integrated picture of exposures that provides an explicit view of how the company currently makes money for its shareholders and how it will do so in the future.

**Develop scenarios.** It's not unusual for an initial mapping effort to uncover dozens of exposures, but typically no more than eight to 10 merit strategic debate, because of the uncertainty that surrounds them and their potential to greatly affect financial performance. So define a disciplined, manageable set of variables, and ask yourself: What are the extreme but plausible scenarios? (If none of the scenarios you've come up with change the decisions you would make, then they aren't extreme enough.) From those scenarios, companies can develop three buckets of activities: "no regrets" moves (those that can be made with a high degree of confidence and that apply across all scenarios); options and hedges (to mitigate the risks from a changing environment and capture emerging opportunities); and big bets (the moves that are going to reposition the company for the future). Leading auto manufacturers, for example, have developed in-depth scenarios around autonomous driving that lay the foundation for creating proprietary strategies in the long term while identifying options should autonomous vehicles take hold sooner than anticipated.

**Allocate capital.** This step uncovers the investments companies should make in adaptability and resilience—and reminds leaders that resilience can be expensive. The classification of no-regrets moves, options and hedges, and big bets is the basis for shaping capital allocations. Recently, for instance, the surge in generative AI has convinced some companies of the need to reshape their strategies and significantly increase their no-regrets investments in specific applications of the technology that could transform internal productivity. Big bets often revolve around M&A, either to consolidate a market by doubling down on an attractive exposure (as with Microsoft's acquisition of Activision Blizzard) or building scale in an entirely new market where the company wants to shift from short to long (as with Amazon's decision to become a major player in the retail grocery business through the acquisition of Whole Foods).

**Track signals.** In an era of greater volatility, it's also crucial to develop a capability for monitoring potential disruptions and opportunities. Some of these will come from changes to the macroeconomic environment: developments in labor markets, capital markets, broadly disruptive technologies, or economic cycles. Others will be more industry-specific, from new entrants to substitutes for products and services, and some, such as labor needs, may be company-specific. Ask yourself, What is our ongoing capability to monitor these trends? Who is in charge, what are the key inputs from different sources and constituencies, and how can we ensure that a change in these inputs triggers quick actions with conviction? This is also where M&A scouting kicks in: What potential acquisitions would allow your company to adapt the business and balance overall exposures? For example, the 2020 surge in demand for food delivery during the pandemic caused Uber to acquire Postmates and extend its core business from rides to meals.

THERE'S NO SINGLE intervention you can make to modify your company's strategy as we move into the era of volatility. The key, instead, will be to develop a rhythm of awareness, experimentation, and execution that will help you prioritize conflicting demands and allocate resources appropriately to the three key capabilities—prediction, adaptability, and resilience. This approach is geared to action, as every winning strategy must be: It helps you predict which exposures will be most profitable, adapt your portfolios to shift exposures, and protect against surprises that could make those exposures a liability. That's the new formula for growth in a volatile world.

**HBR Reprint** S24023
**Spotlight Package Reprint** R2402B

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"Every function and process can be enhanced if humans and machines work together."

"HEAVY MACHINERY MEETS AI," PAGE 98

# Features

Photograph by **DANIEL STIER**

AI & MACHINE LEARNING

# Bring Human Values to AI

ILLUSTRATOR
GIULIO BONASERA

Speed and efficiency used to be the priority. Now issues such as safety and privacy matter too.


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WHEN IT launched GPT-4, in March 2023, OpenAI touted its superiority to its already impressive predecessor, saying the new version was better in terms of accuracy, reasoning ability, and test scores—all of which are AI-performance metrics that have been used for some time. However, most striking was OpenAI's characterization of GPT-4 as "more aligned"—perhaps the first time that an AI product or service has been marketed in terms of its alignment with human values.

The idea that technology should be subject to some form of ethical guardrails is far from new. Norbert Wiener, the father of cybernetics, proposed a similar idea in a seminal 1960 *Science* article, launching an entire academic discipline focused on ensuring that automated tools incorporate the values of their creators. But only today, more than half a century later, are we seeing AI-embedded products being marketed according to how well they embody values such as safety, dignity, fairness, meritocracy, harmlessness, and helpfulness as well as traditional measures of performance, such as speed, scalability, and accuracy. These products include everything from self-driving cars to security solutions, software that summarizes articles, smart home appliances that may gather data about people's daily lives, and even companion robots for the elderly and smart toys for children.

As AI value alignment becomes not just a regulatory requirement but a product differentiator, companies will need to adjust development processes for their AI-enabled products and services. This article seeks to identify the challenges that entrepreneurs and executives will face in bringing to market offerings that are safe and values-aligned. Companies that move early to address those challenges will gain an important competitive advantage.

The challenges fall into six categories, corresponding to the key stages in a typical innovation process. For each category we present an overview of the frameworks, practices, and tools that executives can draw on. These recommendations derive from our joint and individual research into AI-alignment methods and our experience helping companies develop and deploy AI-enabled products and services across multiple domains, including social media, health care, finance, and entertainment.

## 1 DEFINE VALUES FOR YOUR PRODUCT

The first task is to identify the people whose values must be taken into account. Given the potential impact of AI on society, companies will need to consider a more diverse group of stakeholders than they would when evaluating other product features. These may include not only employees and customers but also civil society organizations, policymakers, activists, industry associations, and others. The picture can become even more complex when the product market encompasses geographies with differing cultures or regulations. The preferences of all these stakeholders must be understood, and disagreements among them bridged.

This challenge can be approached in two ways.

**Embed established principles.** In this approach companies draw directly on the values of established moral systems and theories, such as utilitarianism, or those developed by global institutions, such as the OECD's AI principles. For example, the Alphabet-funded start-up Anthropic based the principles guiding its AI assistant, Claude, on the United Nations' Universal Declaration of Human Rights. Other companies have done much the same; BMW's principles, for example, resemble those developed by the OECD.

**Articulate your own values.** Some companies assemble a team of specialists—technologists, ethicists, human rights


IDEA IN BRIEF

**THE PROBLEM**

*Products and services increasingly leverage artificial intelligence to improve efficiency and performance, but the results can be unpredictable, intrusive, offensive, and even dangerous.*

**THE SOLUTION**

*Companies need to factor AI's behavior and values into their innovation and development processes to ensure that they bring to market AI-enabled offerings that are safe to use and are aligned with generally accepted and company-specific values.*

**HOW TO PROCEED**

*This article identifies six key challenges that executives and entrepreneurs will face and describes how to meet them. Companies that move early to acquire the needed capabilities will find them an important source of competitive advantage.*

experts, and others—to develop their own values. These people may have a good understanding of the risks (and opportunities) inherent in the use of technology. Salesforce has taken such an approach. In the preamble to its statement of principles, the company describes the process as "a year-long journey of soliciting feedback from individual contributors, managers, and executives across the company in every organisation including engineering, product development, UX, data science, legal, equality, government affairs, and marketing."

Another approach was developed by a team of scientists at DeepMind, an AI research lab acquired by Google in 2014. This approach involves consulting customers, employees, and others to elicit AI principles and values in ways that minimize self-interested bias. It is based on the "veil of ignorance," a thought experiment conceived by the philosopher John Rawls, in which people propose rules for a community without any knowledge of their relative position in that community—which means they don't know how the rules will affect them. The values produced using the DeepMind approach are less self-interest-driven than they would otherwise be, focus more on how AI can assist the most disadvantaged, and are more robust, because people usually buy in to them more easily.

## 2 WRITE THE VALUES INTO THE PROGRAM

Beyond establishing guiding values, companies need to think about explicitly constraining the behavior of their AI. Practices such as privacy by design, safety by design, and the like can be useful in this effort. Anchored in principles and assessment tools, these practices embed the target value into an organization's culture and product development process. The employees of companies that apply these practices are motivated to carefully evaluate and mitigate potential risks early in designing a new product; to build in feedback loops that customers can use to report issues; and to continually assess and analyze those reports. Online platforms typically use this approach to strengthen trust and safety, and some regulators are receptive to it. One leading proponent of this approach is Julie Inman Grant, the commissioner of esafety in Australia and a veteran of public policy in the industry.

Generative-AI systems will need formal guardrails written into the programs so that they do not violate defined values or cross red lines by, for example, acceding to improper requests or generating unacceptable content. Companies including Nvidia and OpenAI are developing frameworks to provide such guardrails. GPT-4, for instance, is marketed as being 82% less likely than GPT-3.5 to respond to requests for disallowed content such as hate speech or code for malware.

Red lines are also defined by regulations, which evolve. In response, companies will need to update their AI compliance, which will increasingly diverge across markets. Consider a European bank that wants to roll out a generative-AI tool to improve customer interactions. Until recently the bank needed to comply only with the EU's General Data Protection Regulation, but soon it will need to comply with the EU's AI Act as well. If it wants to deploy AI in China or the United States, it will have to observe the regulations there. As local rules change, and as the bank becomes subject to regulations across jurisdictions, it will need to adapt its AI and manage potentially incompatible requirements.

Values, red lines, guardrails, and regulations should all be integrated and embedded in the AI's programming so that changes to regulations, for example, can be keyed in and automatically communicated to every part of the AI program affected by them.

Next comes identifying what compliance with values looks like and tracking progress toward that. For example, social media and online marketplaces have traditionally focused on developing recommendation algorithms that maximize user engagement. But as concerns about trust and safety have increased for both users and regulators, social media platforms such as Facebook (now Meta) and Snapchat track not only time spent on their platforms but also what customers are seeing and doing there, in order to limit user abuse and the spread of extremist or terrorist material. And online gaming companies track players' conduct, because aggressive behavior can have a negative impact on the attractiveness of their games and communities.

## 3 ASSESS THE TRADE-OFFS

In recent years we have seen companies struggle to balance privacy with security, trust with safety, helpfulness

> If an autonomous vehicle narrowly misses hitting a pedestrian, is that a safety failure or a sign that the vehicle's safety system is working?

with respect for others' autonomy, and, of course, values with short-term financial metrics. For example, companies that offer products to assist the elderly or to educate children must consider not only safety but also dignity and agency: When should AI *not* assist elderly users so as to strengthen their confidence and respect their dignity? When should it help a child to ensure a positive learning experience?

One way to approach this challenge is to segment a market according to its values. For example, a company may decide to focus on a smaller market that values principles such as privacy more than, say, algorithmic accuracy. This is the path chosen by the search engine DuckDuckGo, which limits targeted advertising and prioritizes privacy. The company positions itself as an alternative for internet users who do not want to be tracked online.

The trade-off between time to market and the risk of values misalignment is particularly difficult to manage. Some commentators have argued that to capture a first-mover advantage, OpenAI rushed to bring ChatGPT to market in November 2022, despite arguably weak guardrails at the time. Such moves can backfire: Google lost nearly $170 billion in value after its Bard chatbot made a public mistake at a launch event in Paris. Although all chatbots tend to make similar errors, internal reports later suggested that Google's push for a quick release may have led to early product flaws.

Given the challenges they face, managers are forced to make very nuanced judgments. For example, how do they decide whether certain content generated or recommended by AI is harmful? If an autonomous vehicle narrowly misses hitting a pedestrian, is that a safety failure or a sign that the vehicle's safety system is working? In this context organizations need to establish clear communication processes and channels with stakeholders early on, to ensure continual feedback, alignment, and learning.

A good example of what companies can do, although not specifically focused on AI, is provided by Meta. In 2020, amid growing public concern about how online platforms moderate content, the company established its Oversight Board to help it make value-driven decisions. The board is a group of independent, experienced people from a variety of countries and backgrounds who not only make some difficult decisions but also help the company hear the views of its diverse stakeholders.

The pharmaceutical giant Merck and the French telecom company Orange, among others, are now also setting up watchdog boards or supervisory committees to oversee their AI efforts. In some cases it may be necessary to establish formal AI-policy teams that will monitor and update principles, policies, and values-related metrics for AI's behavior. (For a discussion of some of the difficulties these boards and committees can face, see "The Ethics of Managing People's Data," HBR, July–August 2023.)

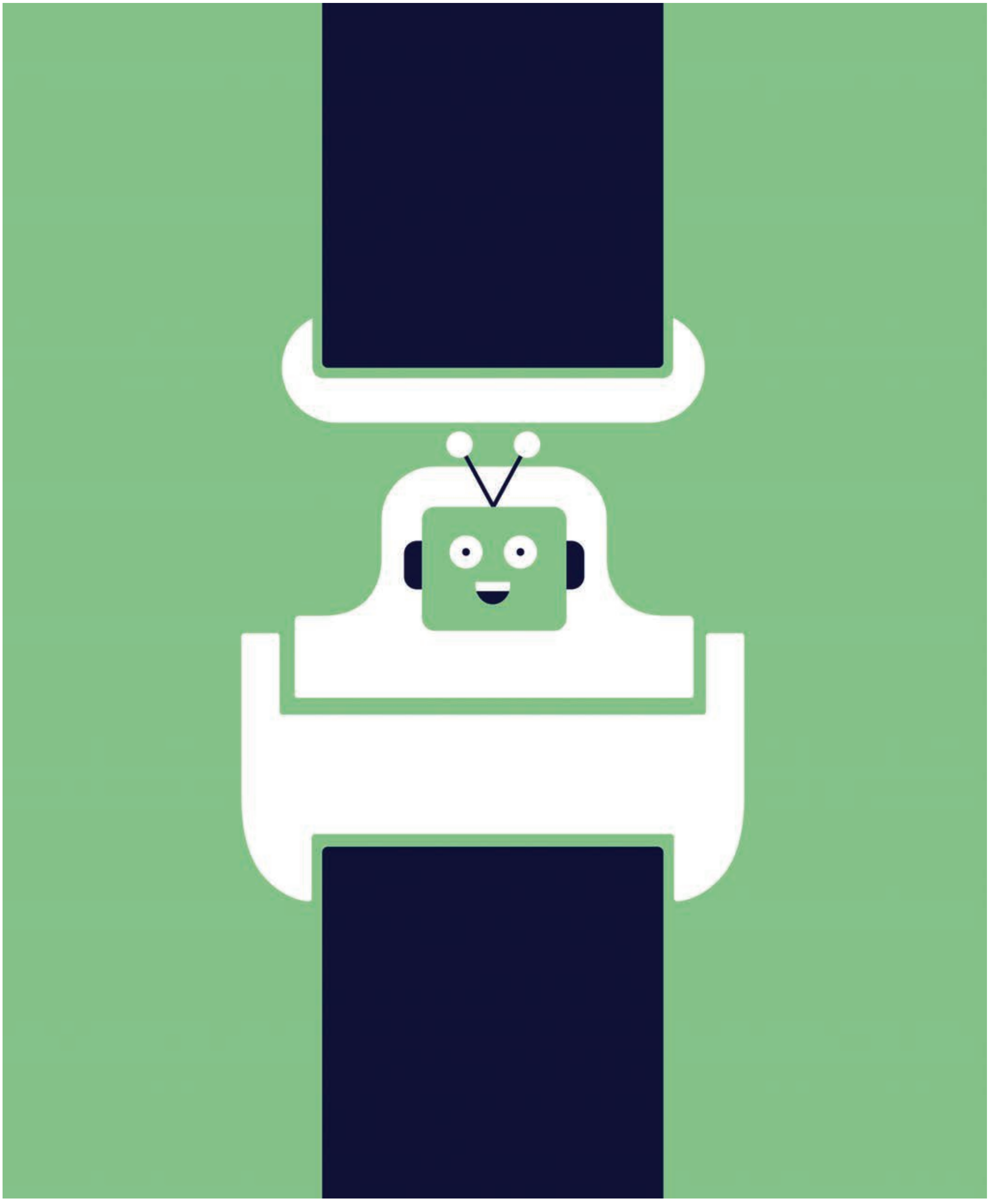
## 4 ALIGN YOUR PARTNERS' VALUES

Sam Altman, as OpenAI's CEO, shared a challenge on the podcast *In Good Company*: How much flexibility should his company give people of differing cultures and value systems to customize OpenAI's products? He was referencing a trend whereby companies take pretrained models, such as GPT-4, PaLM, LaMDA, and Stable Diffusion, and fine-tune them to build their own products.

As Altman noted, the problem with this is that owners of the foundational models have little or no control over what is done with their products. The companies adapting the models have a similar problem: How can they ensure that new products created with third-party models are aligned with desirable values—especially given limitations on how much they may fine-tune them? Only the developers of the original models know what data was used in training them, so companies will need to select their AI partners carefully. They must also align with other partners, such as the providers of training data, which may have all sorts of undesirable biases that could infect the end product.

To address these issues, AI developers may need to establish processes to assess external AI models and data and unearth potential partners' values and underlying technical systems before launching new partnerships. (This can be similar to the way companies manage potential partner risks regarding sustainability and practices for measuring and managing Scope 3 emissions.)

This is not a one-shot game. As the race among powerful foundational models unfolds, companies may change the models they use for their products over time. They will find that AI-testing capabilities and effective due diligence around values could well be sources of competitive advantage.



If AI behaviors and data include potentially harmful content, any psychological impact on content reviewers needs to be considered.



## 5 ENSURE HUMAN FEEDBACK

Embedding values in AI requires enormous amounts of data—much of which will be generated or labeled by humans, as noted earlier. In most cases it comes in two streams: data used to train the AI, and data from continuous feedback on its behavior. To ensure values alignment, new processes for feedback must be set up.

A common practice for doing this is called "reinforcement learning from human feedback" (RLHF), a process whereby undesirable outputs—such as abusive language—can be minimized by human input. Humans review an AI system's output, such as its classification of someone's CV, its decision to perform a navigation action, or the content it generates, and rate it according to how misaligned with certain values it may be. The rating is used in new training data to improve the AI's behavior.

Of course, a key decision in this approach is who should provide feedback and how. RLHF can happen at various stages of the AI life cycle, both before and after the launch of a product. At early stages, engineers can provide feedback while testing the AI's output. Another practice is to create "red teams" whose mandate is to push the AI toward undesirable behavior. Red teams are widely used in other areas, such as cybersecurity. They act as adversaries and attack a system to explore whether and how it may fail. Although these teams are often internal to an organization, external communities can also be leveraged. For example, in 2023 thousands of hackers gathered at the main cybersecurity conference, Def Con, to "attack" large language models and identify vulnerabilities.

Teaching AI to behave according to certain values continues after it is launched. In many ways AI is like humans in this regard: No matter our formal education, we continually adjust our behavior to align with the values of our communities in the light of feedback. As people use AI, or are affected by it, they may observe behaviors that seem to violate its marketed values. Allowing them to provide feedback can be a significant source of data to improve the AI.

Online platforms provide an example of how to set up processes for customer feedback. Social media and online gaming companies, for example, allow users to report with the click of a button potentially suspicious behavior or content, whether posted by other users or recommended or generated by an algorithm. Content moderators, following detailed guidelines, review those reports, decide whether to remove the content from the platform, and provide reasons for their decisions. In doing so, they effectively play the role of "data annotators," labeling data as violations of given values or terms of service. Their labels are used to further improve both the policies of the company and the algorithms it uses.

Annotators' biases and inconsistencies also need to be managed. Online platforms have set up content-moderation and quality-management processes and also escalation protocols to use when it's difficult to decide whether certain content or behavior violates guidelines. In establishing human-feedback systems and practices, companies should ensure that both training and RLHF data represent diverse viewpoints and cultures. In addition, employees and customers should understand how their input and feedback are being used and how annotation decisions are made. For example, the EU's Digital Services Act and other regulations require that online platforms provide transparent annual reports about their content-moderation decisions.

Finally, if AI behaviors and data include potentially harmful content—which may be a particular risk with generative AI—any psychological impact on annotators reviewing that content needs to be considered. In 2021 Meta paid $85 million to settle a class-action lawsuit stemming from psychological harm caused by exposing its moderating employees to graphic and violent imagery.

## 6 PREPARE FOR SURPRISES

AI programs are increasingly displaying unexpected behaviors. For example, an AI simulation tool used in a recent experiment by the U.S. Air Force reportedly recommended that the pilot of an aircraft be killed to ensure that the aircraft's mission was properly executed. In another example, the Go-playing program AlphaGo invented new moves that Go experts deemed "superhuman and unexpected." Perhaps the best-known example involved Microsoft's Bing chatbot, which began to show aggressive and even threatening behavior toward users shortly after launch, stopping only after Microsoft reduced the possible length of conversation significantly. Similarly unforeseen experiences will increase in frequency, especially because Chat GPT and other large AI models can now perform tasks that they weren't explicitly programmed for—such as translating from languages that were not included in any training data.

Some unpredictable behaviors may be induced, whether intentionally or not, by users' interactions with AI-enabled products. Those products may allow for extreme versioning and hyper-personalization by individuals and companies that fine-tune the models with data from various markets. In this way countless versions of an AI product can be created and customized according to how each user interacts with it. Ensuring that all those versions remain aligned and exhibit no novel emergent behaviors can prove challenging.

Although best practices such as strong testing and red teaming can diminish such risks, it may be impossible to guarantee that AI-enabled products won't exhibit unexpected behaviors once they've been launched. A parallel situation has existed for many years in the pharmaceutical sector. No matter how many resources are spent on clinical trials, several approved drugs are removed from the market every year because they produce side effects not identified before launch. That's why "pharmacovigilance" exists, whereby doctors and patients communicate any side effects of a drug to a regulator or a manufacturer in a standardized way; a statistical analysis of those reports is developed; and eventually, if necessary, the drug is removed from the market.

Similarly, companies must implement robust processes to detect and ameliorate harmful or unexpected behaviors after an AI product has been released. Incidents must be identified, reported by users or anyone else affected, and analyzed by the company. Companies may need to build AI-incident databases, like those the OECD and Partnership on AI have developed, so as to constantly learn and document how their AI products evolve.

AI itself can facilitate the monitoring of these products during use. For example, companies can have one AI model challenge another with adversarial learning. The approach is similar to predeployment testing and red teaming, but those are difficult to scale and not applicable to AI models that are updated during use, whereas adversarial learning permits continuous testing of any number of versions of AI models.

More recently, tools for out-of-distribution (OOD) detection have been used to help AI with things it has not encountered before, such as objects unfamiliar to an autonomous vehicle or an appliance. The chess-playing robot that seized a child's hand because it mistook the hand for a chess piece is a classic example of what might result. Essentially, what OOD tools do is enable AI to recognize new variables or changes in the environment, helping it to "know what it does not know" and abstain from action in situations that it has not been trained to handle.

Natural-language-based tools can permit customers to have a direct dialogue with AI-enabled products: As users experience deviations from expected behavioral patterns, they can communicate their needs, intentions, and feedback to the AI in their own language. Such tools allow companies to take a communal, participative approach to ensuring that their products remain aligned with core values.

**IN A WORLD** where AI values alignment may determine competitive outcomes and even become a requirement for product quality, it is critical to recognize the risks and the opportunities for product differentiation and to embrace new practices and processes to stay ahead of the game. Customers—and society more broadly—expect companies to operate in accordance with certain values. In this new world they can't afford to launch AI-enabled products and services that misbehave.

**HBR Reprint** R2402C

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CAREER TRANSITIONS

# Redesigning *Retirement*

## It's time for a new deal between employers and older workers.

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## IDEA IN BRIEF

**THE PROBLEM**

*Labor-force participation is down, and job creation is up. Globally, the share of companies reporting talent shortages rose from 35% in 2013 to 77% in 2023. Meanwhile, roughly 10,000 Americans a day reach age 65.*

**THE GOOD NEWS**

*Many older workers want to keep working. In fact, they already are. Employees 65 or older now represent the fastest-growing segment of the workforce. One study projects that 150 million jobs worldwide will shift to workers over 55 by 2030.*

**THE WAY FORWARD**

*Older and retired workers represent a significantly undervalued and underutilized labor pool. If employers can get better at hiring, retaining, and engaging them, they'll discover countless opportunities for mutually productive employment matches.*

**ABOUT THE ART**

*For his project* Sun City Poms, *Todd Antony photographed the cheerleading squad of Arizona's Sun City retirement community, whose members range in age from 55 to 86.*

CAREER TRANSITIONS

T**ODAY'S WORKFORCE AND** workplace are in unprecedented flux. Organizations have serious talent gaps to fill, for all sorts of reasons: high employee turnover, low employee engagement, the dramatic shift to remote and hybrid work, the continuing Baby Boomer retirement wave, rapid advances in technology. Many of the most critical positions require sophisticated skills, experience, and social acumen. Those needs can't all be met simply by hiring and training inexperienced workers or leveraging AI.

Since the Covid-19 pandemic began, labor-force participation has gone down—and job creation has gone up. According to the America Works Data Center, last fall the United States had 9.5 million job openings but only 6.5 million unemployed workers. Many industries, including manufacturing, wholesale and retail trade, education, and nearly every kind of health services, have far more openings than candidates with relevant experience—in some cases twice as many. The shortage of health care workers, for example, is projected to reach 3.2 million by 2026 in the United States. And the problem is global. A recent ManpowerGroup survey of 39,000 employers worldwide found that the share of companies reporting talent shortages rose from 35% in 2013 to an all-time high of 77% in 2023.

Meanwhile, the age wave continues to crest, with roughly 10,000 Americans a day reaching age 65. By the end of this year, every Baby Boomer will be 60 or older. Employers are increasingly aware that valuable skills, experience, and connections can walk out the door with each retiree. The aggregate impact on institutional knowledge, organizational cohesion and continuity, and, ultimately, shareholder value can be profound.

People who represent large portions of important workforce segments are on the cusp of retirement. For example, Mercer has estimated that from 2021 to 2026 the number of primary care physicians over the age of 65 will nearly double, from 18,000 to almost 33,000. NBC News has reported that nearly 6,000 pilots a year are hitting the FAA-mandated retirement age of 65, and airlines have seen their pilot ranks shrink significantly since the pandemic began.

If it's unsettling news that so many Boomers are reaching the traditional retirement age, the corresponding good news is that many of them are looking for ways to spend their time meaningfully and productively, including by continuing to work after "retiring" from their regular jobs.

In fact, an older workforce is already here. Altogether, more than 10 million Americans who are 65 or older are currently employed, and that number is projected to rise to nearly 15 million by 2032. Today 27% of Americans ages 65 to 74 work or are actively looking for jobs, up from 20% in 2002. And people who are 65 or older now represent the fastest-growing segment of the labor force—by far. (See the exhibit "The New Age of Aging.") It's projected that by 2032 one in four U.S. workers will be 55 or older, and close to one out of every 10 will be 65 or older. In Germany, Japan, and Italy, workers 55 or older already account for a quarter or more of the workforce. A Bain & Company study forecasts that 150 million jobs worldwide will shift to workers over 55 by 2030.

All those changes are part of a broader and deeply significant transformation in the shape of people's lives—and in what it means to "age" and "retire." Seventy-one percent of Americans who are 65 or older say that the best time of their lives is not in the past but right now or still in front of them. And 83% say that feeling "useful" is more important to them than feeling "youthful." Working longer can make them feel both. This has a powerful implication: If "retirement" means completely ceasing work and devoting two or more decades to 24/7 leisure, it's increasingly impractical, unappealing, and obsolete.

We need to overcome lingering ageist stereotypes and start thinking of older and retired workers as a large, versatile, and valuable labor pool—one that's significantly underutilized. Nearly 60% of people who are in or nearing retirement

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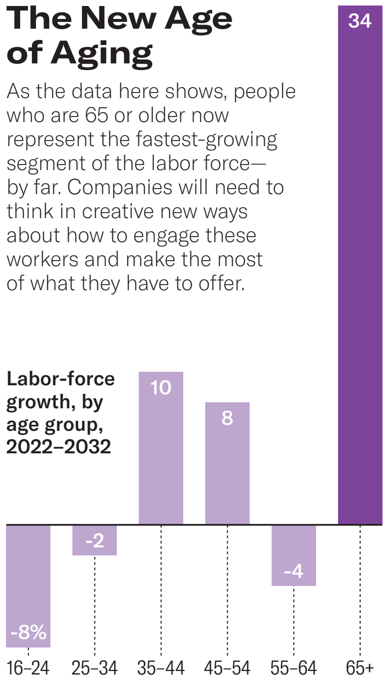
CAREER TRANSITIONS

say they would be open to working during their retirement. That includes some 20 million retirees under the age of 75. If employers can get better at hiring, retaining, and engaging older workers—redesigning the employment deal—they'll discover countless options for mutually productive matches.

We've been closely following these topics—changing workforce demographics, the evolution of retirement, and the effects on employers and employees—for decades. Having surveyed more than 100,000 people in 20 countries, we believe that now more than ever it is time for businesses to recognize and capture the value offered by older workers.

## The New Age of Aging

As the data here shows, people who are 65 or older now represent the fastest-growing segment of the labor force—by far. Companies will need to think in creative new ways about how to engage these workers and make the most of what they have to offer.




Source: Employment projections for the civilian labor force, U.S. Bureau of Labor Statistics

**How companies can engage older workers**

**Preserve experience**
- Phased retirement
- New-skills training, lateral transfers, and rotations
- Sabbaticals

**Replenish experience**
- Rehiring retirees
- Refresher courses to update skills
- Recruiting through retiree networks

**Share experience**
- Mentorships
- Instructor and adviser roles
- Institutional knowledge systems

**Offer flexibility**
- Schedules
- Locations
- Benefits

**Leverage age diversity**
- DEI programs
- Multigenerational teams
- Connection opportunities

## Why Older Workers Want to Work

Americans are living longer than they did in previous generations. A majority of today's 65-year-olds will live well into their eighties—and many considerably beyond. That can be a lot of time to fill. Two-thirds of older Americans now view retirement not as a time of pure rest and relaxation but as a new chapter in life, with plenty of room for new ambitions and renewed purpose.

Working is often on the agenda. Many "working retirees" (no longer an oxymoron) are happy to have part-time jobs in familiar roles—often with their former employers. Others want to try something entirely different, sometimes related to an avocation they put aside earlier in their lives. Many are ready to say so long to managerial responsibilities but keep their hands in as individual contributors. And others enjoy the freedom and flexibility of working for themselves as entrepreneurs, consultants, or contractors.

If older people have more years to enjoy purposefully, they also have more years to fund. Many Americans approaching or in retirement do not have nearly enough savings. The Boston College Center for Retirement Research has found that nearly half of working-age households are at risk of not being able to maintain their current standard of living in retirement, even if the people in them work to age 65. Our recent research found that more than 40 million workers were thinking of retiring later than planned (by an average of five years), most often for financial reasons. Working longer is prudent for many—and necessary for some.

Working longer has also been linked to lower mortality and greater well-being, in no small measure because it enables people to stay mentally, physically, and socially active and purposeful. The exception, of course, is work that is highly stressful or physically demanding, which can be detrimental to people's health.

## The Value of Older Workers

What older workers bring to the table is well documented and yet highly underappreciated. They have knowledge and skills, both functional and organizational. They offer commitment, loyalty, and engagement—valuable traits often in decline these days. They can serve as mentors and role models of resilience and emotional maturity to younger colleagues struggling with the increasing demands of their jobs and lives.

They also possess the emotional intelligence that's key to relating to customers, especially if the customer base itself is aging. In 2022 nearly a quarter of U.S. consumer spending came from people age 65 or older. Given that older Americans constitute such a large and growing market, their perspectives are essential to product development, marketing, and customer service.

The direct business case for engaging older workers is that they're capable, experienced, and productive; relatively easy to onboard and get up to speed; and willing to work in flexible ways—part-time, hybrid, on demand. The broader

Two-thirds of older Americans now view retirement not as a time of pure rest and relaxation but as a new chapter in life, with plenty of room for new ambitions and renewed purpose.

business case is that they can transfer their knowledge and experience to their colleagues, help maintain organizational coherence and continuity, and add diversity (especially cognitive diversity) to work teams and organizations.

To capture the value of older workers, companies may first have to shed some wrongly held assumptions. Among the most prevalent myths about older workers are these:

→ **They're out of touch, set in their ways, and slow to learn.** Our research finds that most older workers are curious and eager to learn (though often denied the opportunity). They aren't so much out of touch as differently *in* touch, because of how cognitive abilities mature. Older adults tend to have higher levels of "crystallized intelligence," which enables them to make connections and informed decisions, whereas younger workers tend to have higher levels of "fluid intelligence," which involves abstract thinking and new ideas.

→ **They struggle with technology.** Older workers are obviously not digital natives, but they've been learning and adapting to new technologies throughout their lives and to new business systems throughout their careers. During the pandemic they made the technological transition to remote work far more capably than many employers assumed they would.

→ **They're blocking younger workers from getting jobs, responsibility, and promotions.** The "lump of labor" theory, disproved by economists, is based on the misconception that there is a finite amount of work in an economy, when in fact the amount of work and the size of the labor force are dynamic. With more workers comes business growth. And as we've noted, older workers, when given the opportunity, can share their experience and foster the development and success of their younger colleagues.

→ **They cost more.** This may be true if workers can be easily replaced, but most cannot. Older workers are typically worth a premium because they have skills and experience that add value—and they stay in their jobs longer, which reduces turnover costs. Part-time or project-based roles for experienced workers can also be a very cost-effective way to supplement an organization's workforce.

The Commonwealth of Massachusetts has become a leader in acknowledging the value of older workers. The state was the first in the country to attain certification as an "age-friendly" employer. Forty-four percent of its 43,000 employees are over age 50, 16% are over 60, and hundreds have returned to part-time work after retiring. Early in the pandemic the number of state employees working remotely jumped from 2% to 51% (customer-facing employees continued to work on-site) in a few weeks. Some doubted that seasoned workers could make the technological leap to remote work. But they did. In fact, as Jeff McCue, formerly the state's chief human resources officer, explains, "They were the ones holding things together. And we have to hold on to these trusted folks, who remain curious, industrious, and focused on customer service. They also serve as examples and mentors to their colleagues. That's our business case for being age-friendly."

## Filling Talent and Experience Gaps

If you are experiencing labor and talent shortfalls and have found that many of your valuable employees are exiting into retirement, it's time to act. We recommend that you take five steps: *Preserve experience, replenish experience, share experience, offer flexibility,* and *leverage age diversity.*

**Preserve experience.** Attentive organizations encourage good employees in hard-to-fill positions to postpone retirement. One way to get them to stay on is to allow them to phase in to retirement, downshifting in terms of hours and responsibility. That may involve making adjustments to compensation and benefits but typically not to health coverage or retirement-plan payouts. Our recent research shows that 68% of workers age 50 or older would like the opportunity to move into retirement gradually, but Mercer reports that only about 36% of global employers offer phased retirement to everyone on staff.

Several measures can rejuvenate older employees and prolong their careers and contributions. Training in new fields can inject invigorating variety into their jobs and introduce them to new perspectives. Lateral moves to other parts of the organization can allow them to apply their skills in new ways while learning new things, making new contacts, and assuming new responsibilities. Rotational assignments on project teams let them share their expertise and multiply their contributions. Sabbaticals (which are good for employees at all career stages) offer them chances to unwind from their jobs, engage in other pursuits, and restart work with renewed focus and enthusiasm.

Principal Financial Group preserves the experience of tenured pre-retirees (employees who are 57 or older and have 10 or more years of experience) by offering an “easy ramp into retirement” with reduced time commitments and responsibilities. It also encourages retirees to “boomerang” back to work after a six-month break to fill specific roles, often bringing retired executives back to coach newly promoted executives. In addition, the company has created a global program that uses an online market to match seasoned employees with colleagues looking to be mentored.

Jon Couture, the chief human resources officer at Principal, explains the strategy this way: “First, we’re in the retirement business, so we should be good at enabling people to transition into retirement, and we appreciate the value that people put on flexibility. Second, we know the value of long-tenured wisdom, institutional knowledge, and mentoring. We want to tap into it as much as possible, and our retirement-eligible staff have a phenomenal desire to share the wisdom they have.”

**Replenish experience.** When recruiters think of new hires, they’re usually not picturing candidates in their fifties and sixties. These people remain a substantially untapped resource. Your own retirees may be easiest to recruit and bring up to speed rapidly, because they know the organization and its culture, but you should also look more broadly, including at the competition’s retirees. Many willing workers have been moved into premature retirement by layoffs and early retirement incentives.

As you search for new employees, root out any assumptions and language in job descriptions and recruiting methods that may discourage older candidates. Don’t put a cap on the years of experience required or use subtly ageist phrases like “energetic” or “digitally savvy” that may signal a bias against older workers. Field-test your organization’s career site with a small panel of older employees and retirees.

If older hires have been out of the workforce for a time, they may need refresher training on the latest work methods, systems, terminology, and technologies, but because of their experience, onboarding and training them typically won’t take as long as it does for younger workers.

There are many ways to access this pool of older potential employees. You can reach them through referrals and age-friendly recruiting channels such as Retirementjobs.com, Jobs.aarp.org, and Retiredbrains.com. If your organization has a retiree network, use it for both recruiting and referrals. Helpful ventures with a specific focus are also emerging: Wahve (Work at Home Vintage Experts), for example, provides specialized expertise from professionals with deep experience in the insurance industry. National Experienced Workforce Solutions assists government agencies with recruiting, enrolling, and administering pay and benefits for older contract workers. Path Forward helps organizations recruit and onboard experienced people, predominantly women, who are returning to the workforce after extended periods of childcare or, increasingly, eldercare.

Sometimes older workers are ideal for the job. The University of Colorado Anschutz Medical Campus (designated an “age-friendly university” by the Age-Friendly University Global Network) hires “older adult research specialists” (OARS) and trains them to recruit other older adults to participate in clinical studies. The OARS’ work includes educating people about what participation involves and following up to encourage them to complete clinical trials. OARS help bridge the cultural divides between study participants and research professionals caused by differences in age, socioeconomics, and health literacy. Thus they play a crucial role in increasing representation among historically underrepresented groups—including rural seniors—in research studies.

**Share experience.** A key way that seasoned employees can add enormous value to their organizations is by passing their knowledge on to their younger colleagues, helping accelerate their development and improve their performance. If this isn’t happening in your organization, you’re missing a two-way opportunity.

Direct experience sharing takes a variety of forms. Older employees can mentor younger employees in an ongoing way, teach them in formal training programs and informal sessions, and coach them, often as they transition into new roles. Younger workers can shadow their more-seasoned colleagues. And older workers can advise project teams and work groups in need of specific expertise. Phased retirement programs can play an important role here. In Bank of America’s mainframe-technology area, for example, retirements are planned well in advance, and as tenured employees gradually reduce their hours they’re paired with newer employees who become their apprentices.

Older employees can also share their knowledge indirectly by helping develop business information systems that capture and disseminate it. This role is more important now than ever: As new AI systems transform how we gather and distribute information, there’s a growing need for people with the experience and judgment to evaluate the performance of those systems—and to notice when they go awry.

Nowhere is the sharing of experience more important today than in nursing, which may be the most widely understaffed

job category in the increasingly understaffed health sector. Allegheny Health Network, part of Highmark Health, has come up with some innovative solutions to that challenge. Nurses returning to work after time away first receive online refresher training through the University of Delaware and then shadow colleagues to get reoriented. The company has also created a new digital program that gives experienced nurses the option of working remotely: Patient rooms are equipped with smart TVs, tablets, and cameras, enabling digital nurses to check in on patients, answer questions, handle documentation-intensive tasks such as admission and discharge, and even provide guidance to in-room nurses. This allows on-site nurses more time for patient care and gives experienced nurses a new option for extending their careers.

**Offer flexibility.** More than ever before, engaging experienced employees (and talented people generally) requires work arrangements that are flexible on three dimensions.

The first is timing. Most employees approaching retirement would like to reduce their working hours along the way, and most employees interested in working during retirement are looking for part-time or flextime positions, which allows employers to tap them when demand peaks or special experience is called for.

The second is location. Like employees of all ages, older employees appreciate the benefits of working remotely. But our research finds that they also appreciate the social connections of the workplace and so tend to be happy to work on-site when necessary.

The third is benefits. Older employees need and appreciate life-stage-specific benefits, including those related to caregiving and retirement planning. Retirees working part-time are not so interested in paid time off, but they highly value health insurance (supplemental for those with Medicare) and insurance for dental care (which Medicare does not fully cover). A few organizations are now offering brief leaves for new grandparents. When companies provide such benefits, they send an important signal to older employees that they understand what matters most to them.

The global reinsurer Swiss Re has a very comprehensive approach to work and retirement that engages employees,




## About the Research

Data featured in this article comes from the recent Age Wave/Edward Jones studies **"Resilient Choices: Trade-offs, Adjustments, and Course Corrections to Thrive in Retirement"** (2023), **"Longevity and the New Journey of Retirement"** (2022), and **"The Four Pillars of the New Retirement"** (2020) and from the Age Wave survey **"The New Age of Aging"** (2023). All are available at www.agewave.com.



differentiates the company as an employer, and shapes its culture. Its trademarked Own the Way You Work program has been in place for nearly a decade. As long as employees meet commitments to clients and colleagues (and comply with laws, rules, and regulations), they have a lot of autonomy to decide how, when, and where work is carried out. Many, including those approaching retirement, benefit from flexible arrangements, such as the ability to do their jobs from home, purchase additional annual leave, or work part-time.

In addition, the company supports personalized transitions into retirement. Older employees are expected not only to share their knowledge through mentoring or coaching but also to learn from their colleagues and keep developing. In Swiss Re's head office in Zurich, for example, a tool kit for older employees encourages them to plan their future contributions, set new goals, and take their careers in new directions.

**Leverage age diversity.** According to AARP, less than half of global companies emphasize age in their diversity, equity, and inclusion policies today. That's another major missed opportunity because, as noted, in addition to having different levels of knowledge, employees of different ages have different kinds of cognitive skills and emotional intelligence—all of which are essential to the mix in a healthy organization. Perhaps the most beneficial way an organization can make its commitment to age diversity tangible is to purposefully create multigenerational work teams so that people of various ages and life stages work together regularly, learning from and about one another.

Discussions of generations in the workforce too often begin with intergenerational conflict and how to mitigate it. Those concerns tend to be overblown; "OK, Boomer" is not the norm. AARP has found that a large majority (70%) of Americans like to work with colleagues of various ages, and in our research more than eight in 10 U.S. workers—across all generations—say they wish older and younger people took more time to learn from one another. If your organization has intergenerational issues, it probably needs more intergenerational teams.

You'll find one of the longest track records of commitment to diversity and a multigenerational workforce at Sodexo, a leader in food and facilities management. Its mentoring program, widely recognized as best-in-class, has been evolving since 2004 in service of objectives that include preparing more women for leadership roles, enabling cross-functional collaboration, and developing talent. The company's Diversity Learning Labs program, begun in 2005, educates employees about generational experiences, characteristics, and collaboration. Its Reconnexions alumni group, started in 2008, offers former employees of all ages a means of staying connected and access to a variety of professional development opportunities. Finally, the company's i-Gen employee network, an employee business-resource group in operation since 2014, fosters multigenerational connection and understanding.

## A Win-Win

We first explored these challenges and opportunities in HBR exactly 20 years ago, in our article "It's Time to Retire Retirement." When we compare the situation we described back then to where we are now, we see encouraging trends. Employers are more aware of the demographic challenges that confront them, and many have recognized that they can tap into the pool of older workers to prevent and mitigate shortages of talent. They're recognizing that earning the "age-friendly" designation confers advantages in the marketplace. And thanks to new technologies and disruptions caused by the pandemic, flexible work arrangements are more feasible—and more widely available—than they were. Phased retirement and retiree-return programs are much more common, too, but significantly, they're typically still not part of a mutually reinforcing talent strategy.

It's time for that to change. Today more and more older people want or need to work longer—and more organizations than ever need their help. In this "new age of aging," the strategies and initiatives we've described present a clear win-win: When older adults stay active and engaged, it's good for them and their families, for employers and the economy, and for society at large.

**HBR Reprint** R2402D

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ENVIRONMENTAL SUSTAINABILITY

# How to Market *Sustainable* Products

## *Three paths to success*

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PHOTOGRAPHERS **TED AND CHELSEA CAVANAUGH**

**W**HEN COMPANIES MARKET the sustainability features of their offerings, they often overlook a fundamental truth: Social and environmental benefits have less impact on customers' decisions than basic product attributes do. With any purchase, consumers are first trying to get a specific job done. Only after they find something that will help them do that job—and only if sustainability is important to them—will they look for a product that in addition confers a social or environmental advantage. No one decides to buy a chocolate bar to, say, improve the working conditions of farmers on the Ivory Coast. People buy chocolate, first and foremost, because they want to indulge in a small pleasure. No one decides to buy an electric car to prevent climate change. People buy cars because they need transportation; reducing their carbon footprint is an ancillary benefit.

Missing this critical point, many marketers overestimate consumers' appetite for sustainable products. Because of that, in recent years companies have flooded the market with sustainable offerings that consumers are slow to buy, particularly given the price premium such products typically command. Though products that incorporate environmental or social messaging now account for 48% of new consumer packaged goods, their share of the overall U.S. consumer goods market remains relatively low. In 2021 it was only 17%, up from 14% in 2015, according to a report from New York University's Center for Sustainable Business. The misalignment between what companies offer and what consumers want is evident not just in B2C sectors but in B2B ones as well.

Drawing on an extensive three-year research initiative at IMD business school that encompassed surveys, interviews, and interactive sessions with more 500 executives in B2B and B2C sectors from various countries, we've created a guide for sustainability marketing that builds on a more nuanced understanding of how consumers weigh the relative value of traditional and social and environmental benefits. With clarity on how consumers make this calculation, executives can devise product and service strategies that will maximize their chances of success.

## Balancing Benefits

Marketers often imagine that sustainability features simply layer additional value on top of an offering's traditional benefits. But in reality they can interact with a product's primary attributes in three ways:

- *independence,* having no impact on traditional benefits
- *dissonance,* diminishing traditional benefits
- *resonance,* enhancing traditional benefits

Let's consider three "sustainable" laundry detergents that compete with a conventional, middle-of-the-pack product that doesn't promise any environmental or social benefits.

The first is a detergent with natural ingredients that are better for the planet. It's priced slightly higher because the

**IDEA IN BRIEF**

**THE PROBLEM**

*Many companies overestimate consumers' appetite for sustainable products, flooding the market with offerings that don't sell well.*

**THE OPPORTUNITY**

*By understanding how sustainability features interact with a product's core benefits, companies can devise effective marketing strategies for different consumer segments.*

**THE SOLUTION**

*Assess whether your sustainable offering's performance is equivalent, inferior, or superior to that of conventional alternatives. Tailor marketing messages to customers according to how they value sustainability versus traditional attributes.*

Many customers have a subconscious "sustainability budget" and may be willing to spend only a limited amount of money on sustainable products.

formulation is more expensive to make. But this detergent's natural ingredients don't reduce its traditional benefits—its cleaning ability, stain-removing power, and gentleness. This is a case of independence. The customer gets the same performance the traditional detergent offers (reasons to buy) with the added environmental benefit (reasons to care) but pays a little bit more.

Almost all brand-related social-cause initiatives are a form of independence marketing. J&B whiskey has garnered millions of social media views for an advertisement that promotes diversity and inclusion through a story about a family accepting a transgender member. Similarly, IBM's support of Girls Who Code, a nonprofit organization dedicated to helping young women enter computer science fields, doesn't directly affect the performance of its consumer and business offerings. In both cases the brands' social-cause commitments enhance buyers' reasons to care and may influence customer loyalty and sales, but they don't affect product performance.

It's worth noting that when selling offerings with independent sustainability benefits, firms in different industries may be competing for the same dollars. Many customers have a subconscious "sustainability budget" and may be willing to spend only a limited amount of money on sustainable products. So any firm that can provide customers with *greater* sustainability benefits has a potential competitive advantage.

In the second detergent, natural ingredients diminish the product's performance. As a result it suffers from dissonance. Consumers perceive that it is ecofriendly but that it delivers less and costs more than a traditional product. The reasons to care increase, but reasons to buy decrease.

Interestingly, research shows that merely signaling that a product is green can create negative perceptions about it, a phenomenon called "sustainability liability." For instance, environmentally friendly drain openers may be perceived by consumers to be less effective even though they aren't necessarily so, and shoes made with green materials are sometimes wrongly assumed to be less durable. (This perception of liability may change over time, however, as consumers become more accustomed to sustainable products.)

With the third detergent, the product's natural ingredients have unique properties that enhance its cleaning power and gentleness. This is a case of resonance. Consumers' reasons to buy and reasons to care both increase. Makers of resonant products find synergies between sustainability and performance. Revier Cattle Company in Minnesota, for instance, has a program called Total Livestock Care, which focuses on excellent feed (all-natural and with no preservatives, hormones, or additives) and excellent facilities (to reduce stress on cattle). According to blind taste tests done with chefs, restaurateurs, and butchers, these practices have improved the taste of Revier's meat while enabling the company to achieve a sustainability scorecard that's enviable in its industry.

## Marketing to Sustainability Segments

The manner in which social and environmental features interact with traditional attributes significantly affects a product's appeal to different consumer groups. However, we find that many companies unwittingly adopt a one-size-fits-all approach to sustainability marketing, which risks alienating certain customers. Brands need to segment their customers by attitudes toward sustainability and tailor their messages accordingly.

A simple and practical way to do that is to divide consumers into three categories. *Greens* (or if your marketing department prefers to use personas, "true believers") place a high value on sustainability, actively seek it in their purchasing, and may sacrifice performance or economy to get it. *Blues* (or perhaps "agnostics") place a moderate value on sustainability and, if they don't need to sacrifice much (or ideally at all) on price and performance, tend to prefer sustainable offerings over alternatives. *Grays* ("disbelievers") don't care about sustainability and may even view it with skepticism. Each kind of consumer requires a different approach.

A customer—whether an individual or a company—may shift consumption profiles from product to product. Someone may be a green consumer in one category (for example, exclusively purchasing clean energy), blue in another (preferring recycled packaging if there's no cost difference), and gray in another, avoiding sustainable cleaning products or construction materials on the assumption that they underperform. Understanding these dynamics is important.

Consumers' desire for *social signaling* could drive more-conspicuous sustainable choices over less visible ones.

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It's also imperative to recognize that making a buying decision is a multifaceted psychological process, one that is not always steered solely by the tangible attributes of products or services. For instance, it may be affected by the phenomenon of *moral licensing,* wherein consumers, having made a significant ecofriendly decision like investing $50,000 in an electric vehicle, become less likely to spend an additional $5 on an ecological product, because they feel they've earned a pass. Similarly, the desire for *social signaling* could drive more-conspicuous sustainable choices like solar roof panels over less visible ones—say, an ecofriendly paper product. It's crucial for marketers and businesses to be aware of such behavioral tendencies. (For more on how biases influence green consumption, see "The Elusive Green Consumer," HBR, July–August 2019.)

In addition, the three types of products all have different playbooks. Let's now look at each one in action.

## The Independence Playbook

A B2B client of ours, Georg Fischer (GF), uses renewable materials in all the polyvinyl chloride (PVC) metric pressure pipes, fittings, and valves it produces. The sustainable PVC resin is made using tall oil, a waste product from paper production, reducing manufacturing-related $CO^2$ emissions by up to 90%, with no impact on product quality and durability.

How should GF communicate about its PVC manufacturing with customers? With gray customers there's no upside in emphasizing sustainability attributes, and so they shouldn't be a focus—particularly since grays may wonder if there's a hidden sustainability price premium or performance cost. However, GF's sustainable manufacturing is a selling point for green and blue customers. With them, GF should underscore that using ecofriendly PVC resin doesn't affect the performance of its pipes, fittings, and valves. For these customers, GF offers science-based, third-party audits of each product's environmental performance over its complete life cycle.

With blue customers it's important to understand their sustainability priorities and gauge your relative contribution to them. Another of our clients, a company that provides energy-efficient milking equipment to the dairy industry, was puzzled by a blue customer that showed little interest in its environmental message. It turned out that the customer was working with its animal-feed and supplements supplier to meet its emissions-reduction goals because cows, not farm equipment, were the main source of its greenhouse gas emissions. Our client's efficient equipment would be of little help in meeting the customer's sustainability goals. The company belatedly realized that, for this customer, it was leading with the wrong message and should have focused instead on the cost savings its equipment promised.

Independence strategies typically offer temporary differentiation advantages. Because customers may choose to get their sustainable benefits from a completely different kind of product, it's difficult to charge a premium for them over the long term. Blue consumers, in particular, will look for the lowest-priced sustainability benefits. If you do charge a premium, be conservative and don't chase excessive margin—and continually reassess your customers' sustainability needs and your competitive situation.

## The Dissonance Playbook

Just because dissonant products require customers to accept reduced performance in exchange for sustainability, that doesn't mean their brands will inevitably fail. Firms can profitably sell such products to green consumers and in some instances even to blue ones.

One strategy to broaden the customer base is to attract a subset of blue customers who can be persuaded to accept a performance sacrifice because they stand to gain personally from new benefits tied to a firm's sustainability actions. Take Oatly. When its plant-based milk was launched in Europe in 1994 as a lactose-free alternative, its sales stagnated owing to the sticky habits of milk consumers and perceptions of inferior taste. However, in 2014, it shifted its image to a lifestyle brand for the "post-milk generation," using the slogan "It's like milk but made for humans." While tacitly acknowledging that the product might differ in taste and nutrition, Oatly emphasized its sustainable and trendy attributes, making it more appealing to a wider audience. That strategic rebranding paved the way for its successful entry into the U.S. market and in 2022 pushed its global sales to $722 million.

While Oatly made its dissonant product cool to consumers, other companies have had success marketing more-tangible benefits. Toyota's hybrid Prius is an iconic example. Launched in 1997, the Prius was expensive, and some considered it underpowered compared with cars with conventional engines. But the greenest buyers were willing to accept those trade-offs for the environmental benefits it promised, as well as the social signaling that the car's unique silhouette conveyed. In addition, Toyota shrewdly used nonmarket strategies to broaden Prius's appeal in California. It successfully lobbied the state legislature to allow hybrids in high-occupancy-vehicle lanes even with a single occupant. Hybrid owners were also allowed to park for free at some public meters in Los Angeles and other California cities. Those strategies pulled in blue customers. Over time, Toyota improved the Prius and reduced the trade-offs on traditional benefits. In 2022, it sold 2.6 million hybrid vehicles globally across all its brands. To put that number in perspective, Ford sold 4.2 million vehicles of all types in North America that year.

Firms with established brands should be thoughtful in how they position dissonant product extensions. Our advice here is simple: Do an honest assessment of the trade-offs; large trade-offs will be acceptable only to greens, and in that situation marketers should be laser focused on highlighting the new product's sustainability credentials to that segment only. If a firm can leverage new benefits tied to sustainability, as Oatly and Prius did, it can appeal to blue customers as well. Pricing strategy here is straightforward: Because with dissonant products you must focus mostly on green consumers, who have a large appetite for sustainable benefits, you have some leverage to extract a premium. But how big that premium is depends on how much consumers value those benefits.

Firms should also continually scan the market for potential converts—customers who may have previously resisted a dissonant offering but are now willing to accept some sacrifice to achieve their sustainability goals. Maersk, the integrated container logistics firm, is a convert. The firm made a commitment to transport at least 25% of ocean cargo using green fuels, which can cost as much as 54% more than conventional fuels, by 2030. Maersk made that move to achieve its own sustainability goals as well as to support large customers that were frustrated with the lack of options for reducing emissions from transportation.

## The Resonance Playbook

Unlike offerings with independence or dissonance, products with resonant sustainability features have much more latitude to target a broad customer base. For the most part, the brand message is all upside: "We give you better performance, and you get sustainability too." Both greens and blues respond well to messages that showcase performance as well as sustainability. While it may seem that you should be able to charge the highest prices for resonant products, keep in mind that they could put off gray customers. With them you must justify premium prices by either highlighting higher traditional benefits or bundling sustainable benefits with traditional benefits.

GEA, a B2B manufacturing client of ours, designs equipment for various industries with a focus on sustainability and cost-efficiency. Its AddCool solution for milk-powder production slashes carbon emissions by 50% to 80% and operating costs by 20% to 30% while preserving product quality. Yet as Nadine Sterley, GEA's chief sustainability officer, notes, adopting these solutions isn't a no-brainer for everyone. Some brands readily integrate them, while others are more cautious.

European customers, mainly greens and some blues, have often paid premium prices for GEA's equipment. However, sustainability is less valued by certain U.S. and Asian clients who tend to be grays. Leading with a sustainability-centric message could turn off those customers, who might think they're shouldering sustainability costs. So GEA fine-tuned its messaging and pricing in those markets, underscoring economic advantages (such as reduced energy and water use) rather than sustainability.

Firms should revisit their overall brand promise if a new sustainability benefit can be tied to an easily recognized traditional one. Reckitt launched a product-line extension of Finish, a leading dishwashing detergent, that was so effective it eliminated the need to rinse dishes before loading. That saves up to 75 liters of water with every wash, a huge sustainability gain, but it also played into Finish's traditional brand promise of delivering exceptional cleaning. Finish thus modified its messaging to give customers "sparkling clean dishes the first time, every time, without the need for pre-rinsing—saving dozens of litres of water per load." Eliminating

The real battle for sustainable products won't be waged through advertising or public relations stunts; it will happen in research-and-development labs.

## Playbooks for Sustainability Success

Sustainable products cannot all be marketed in the same way. How their social and environmental benefits interact with traditional product benefits will affect which consumer segments they appeal to and the strategies that work best with them.

| | INDEPENDENCE | DISSONANCE | RESONANCE |
|---|---|---|---|
| VALUE PROPOSITION | More sustainability with same performance on traditional benefits | More sustainability but lower performance on traditional benefits | More sustainability and greater performance on traditional benefits |
| MESSAGE TO CUSTOMERS | "We can help you meet your broader sustainability goals." | "We are in this together, but you need to make a performance sacrifice." | "We've improved performance, and sustainability is an extra benefit." |
| CUSTOMER SEGMENTS | Green consumers (true believers) and blue consumers (agnostics) | Niche markets—mainly green and some blue consumers | Green and blue consumers as well as gray consumers (disbelievers) |
| COMPETITORS | Any player providing the same sustainability benefits | Any player providing the same traditional benefits | Any player providing the same traditional benefits |
| PRICING STRATEGY | Charge temporary price premium if sustainability is a must-have | Charge a premium because green customers are less price-sensitive | Go high; performance is enhanced |

pre-rinsing is a new traditional benefit that flowed from the pursuit of a sustainability benefit—saving water. It resonates with greens, blues, and even most grays. In its first year touting the new brand promise in Turkey, an initial test market, Finish saw its market share among tier-one brands rise by 27%. Reckitt has since rolled out the product with a similar message in more than half a dozen countries.

ONE THING TO keep in mind is that the three playbooks don't offer the same potential for long-term success. Resonant products undoubtedly hold the greatest promise. They can appeal to all customer segments, positioning firms to use sustainability as a powerful strategic tool. A dissonant approach might work in certain geographies or sectors, but it will remain a niche strategy until greens come to dominate the consumer landscape. Independent products, though offering broader appeal to both greens and blues, could end up vying for consumers' sustainability dollars across different categories.

While we have made marketing the focus of this article, at the core of successful sustainable offerings lies innovation; there's no substitute for it. Thus the real battle for sustainable products won't be waged through advertising or public relations stunts; it will happen in research-and-development labs. There leading firms will craft groundbreaking solutions that not only deliver unparalleled performance but also champion environmental protection and societal well-being.

**HBR Reprint** R2402E

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# Nurturing *Innovation*

INNOVATION

A great idea isn't enough. Leaders must create an environment that allows teams to collaborate successfully over time.

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**ABOUT THE ART**
*Felicity McCabe photographed circus troupe trainees in Ulaanbaatar, Mongolia, for her project* 42 Feet*, documenting their passion, endurance, and ambition.*

**DESPITE AN AVALANCHE OF** initiatives in cross-sector collaboration and open innovation, businesses still struggle to develop game-changing ideas and bring them to market. Many people argue that the problem is that we still don't have enough new ideas, and we need to work harder at getting diverse people into the conversation. New, imaginative ideas wouldn't hurt, of course, but that prescription misses an important truth: Successful innovation involves more than just letting a thousand ideas bloom.

As studies of hackathons and other accelerated forms of innovation show, all too often very little happens after the initial brainstorming phase. The organizers of these initiatives tend to focus on facilitating the collision of ideas and talents without planning for the long term. Those taking part in the initiatives enter with every intention of making a long-term commitment, but most are unprepared for or underestimate what lies ahead.

The reality is, innovation is more than generating an idea—it is a long, collaborative journey. Daniel Epstein, the CEO of Unreasonable Group, an organization that brings together a global network of entrepreneurs who are tackling some of the world's most pressing challenges with investors, creatives, and business leaders, explains it like this: "Business in the 20th century was oftentimes defined by having a competitive advantage. Business in the 21st century will be defined by having a collaborative advantage." A considerable body of academic research into social networks, psychology, creativity, and the entrepreneurial process validates that point of view. It shows that innovation is more likely to succeed when it is a curated process in which an intermediary takes responsibility for sparking and sustaining collaboration among the people involved.

In this article, we draw on that research and on our own and describe the crucial roles that intermediaries can play. We show how they can support innovative collaboration throughout the innovation journey—from providing opportunities for innovators to make connections, to helping them develop those connections into relationships, and finally to sustaining and refreshing those relationships as the collaboration evolves.

STEP 1

## *Making Connections*

Beyond simply bringing people together and providing a structure for their conversations, the intermediary must spark trusting relationships. A good example of how to do that comes from Unreasonable Impact (UI), a partnership between Barclays and Unreasonable Group. (We have worked with all three of these organizations in various capacities, including as mentors, academic advisers, and clients.) UI provides a network of entrepreneurs with the resources they need to develop their ventures and solve challenges that arise in order to rapidly scale.

UI runs three programs each year that bring together a select group of growth-stage businesses. Those programs typically last from five to seven days, and include sessions that address entrepreneurs' critical needs, from understanding regulatory shifts to scaling up manufacturing. Entrepreneurs also have the opportunity to connect, get feedback, and share concerns. To date, the participants have built more than 300 ventures across 53 countries, generated more than $7 billion in revenue, and hired more than 25,000 full-time employees.

To understand the process better, and as part of Accenture's research on the power of cross-sector collaborations to address complex social issues, three of us conducted a series of interviews and workshops with 28 collaborators. We found that UI's success in setting up collaborations can be largely attributed to two factors.

**Careful selection.** Most open-innovation research has focused on defining the most generative framing for challenges and how best to broaden participation. UI takes a different approach: It handpicks the projects and the people invited to join its community. In addition to considering

Innovation is more likely to succeed when it is a curated process in which an intermediary takes responsibility for sparking and sustaining collaboration among the people involved.

**IDEA IN BRIEF**

**THE PROBLEM**

*Despite a multitude of initiatives in cross-sector collaboration and open innovation aimed at generating innovative opportunities, businesses still struggle to bring to market game-changing ideas.*

**THE REASON**

*Firms and innovators focus too much on facilitating the collision of ideas and talents without planning for the long term. But innovation is about more than generating ideas—it is a long, collaborative journey.*

**THE SOLUTION**

*Innovation is more likely to succeed when it is a curated process in which an intermediary takes responsibility for enabling and sustaining collaboration and connection among the parties involved.*

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financials, the social impact of businesses, and the diversity of the broader community, the UI team makes sure that the venture founders it invites are aligned with the mission, values, and beliefs of the UI community.

The selection process is rigorous, and success isn't the only criteria. UI team members look for personalities they believe will contribute to the community, and that means being able to collaborate well. One UI fellow we spoke with says, "I just trust the Unreasonable community to be people with the passion and heart to serve the community."

The Unreasonable team works to create what Harvard Business School professor Amy Edmondson calls "team psychological safety"—that is, an environment in which entrepreneurs feel comfortable sharing stories of both successes and challenges. At Unreasonable, they believe that equalizing the power dynamics between mentors and mentees is key to achieving such a state, to the extent that they avoid using those terms. Instead, UI describes relationships as collaborations and program participants as fellows.

**Curation of the experience.** UI carefully manages its programs' in-person experiences—from workshops to team-building activities to community dinners. All the fellows and mentors we spoke with mentioned "the magic" that happened over the course of these events. UI retreats typically combine small-group interactions with periods of reflective time.

Consider how community dinners are held. Fellows are divided into tables of five or six people plus a UI mentor. Each table is given a prompt; for example, "Tell us about a decision you made that changed your life" or "Describe an object that is meaningful to you." Each fellow gets five minutes to respond without interruptions. Fellows often share personal and emotional experiences. As one participant recalls, "There was not one dinner without some tears."

The programs include periods of time off for activities such as yoga or quiet walks. The importance of having space for reflection is well documented in organizational psychology research: It is how people come to understand others with whom they have shared intense experiences and discover whom they might be able to form relationships with.

The careful curation of the retreat experiences can help create a foundation for strong relationships. Here's one example: Two fellows, one working on recycled 3D printing

and the other on residential wind turbines, discovered they had shared connections and interests at a lunch during a UI program. They stayed in touch in the months following the retreat, exchanging updates and advice and bonding over their journeys as they developed their ventures. A year after they first met, the fellows had a moment of realization at another UI event, where they were demonstrating prototypes of their products. They recognized there were opportunities to work more closely together to improve their respective products—and possibly develop a new type of appliance. By the time we interviewed one of them, they were applying for grants together in order to turn their ideas into a more structured collaboration.

The importance to relationship-building of carefully selecting people and giving them moments of both intense connection and quiet reflection are well-known. In fact, many corporations use this formula in leadership-development programs. But in our experience, it is rare to find those practices so carefully followed in the context of innovation and the entrepreneurial process.

**STEP 2**

## *Developing Relationships*

After an idea forms and a relationship is made, the collaborators have to define their shared goals, metrics, and targets and devise the processes and structures they'll need to make their idea a reality and support the daily operations of a functioning business.

Creating a road map for a collaboration is a complicated undertaking, and getting an outside perspective can be incredibly helpful. Consider the founder of a venture in last-mile distribution, who was working with an entrepreneur developing biotech solutions. Their teams had started working together to deliver health care products to isolated communities during the pandemic. "You need time and space to get to know the partners, do the right expectations management, and understand what exactly it is you're trying to achieve together, and that honestly needs to be facilitated," the founder explains.

Another UI fellow echoes that sentiment. "A collaboration requires external support, like a third-party strategist who says, 'here's how you guys can align' to help design and facilitate the next steps." All the fellows we spoke with highlighted the challenge of moving from a shared idea and the early excitement of the collaborative encounter to establishing a collaboration infrastructure (roles, leadership, project management needs, and team dynamics) while refining the idea of the product or service to work on together. The UI program provided them with resources, connections with other fellows and mentors, and regular meetings, which provided some accountability.

Successfully moving from the idea stage to implementation depends on two factors:

**Structured follow-up.** The importance of sustained direct support is still frequently overlooked by the organizers of hackathons or open-innovation challenges, who tend to focus on speed and idea generation. However, an increasing number of intermediaries are recognizing the need to support innovators and entrepreneurs beyond the original event.

One example is the open-innovation project #WirVsVirus (in English, #WeVsVirus), an initiative in Germany that brought together seven civil society organizations in response to the Covid-19 pandemic. It kicked off with an online hackathon that attracted 28,000 participants and produced 1,500 ideas.

What set #WirVsVirus apart, as Johanna Mair, a professor at the Hertie School in Berlin, and Thomas Gegenhuber, a professor at JKU Linz in Austria, highlighted in a study, was that organizers planned from the start for a six-month follow-up support program to help 150 teams prototype and test the ideas they developed during the 48-hour hackathon. In the follow-up program, participants were given opportunities to connect with domain experts, investors, and potential scaling partners, much as intermediaries provide. Teams participated in weekly calls to share what they'd learned and the challenges they were facing.

#WirVsVirus's organizers went further than most by bringing in mentors who focused on skill development and team dynamics from the get-go. Even during the hackathon weekend, moderators performed a dual role: They provided domain expertise and also helped people set up their collaborations, structure the creative process, and manage team dynamics. They assigned a Slack channel to assist teams in finding one another, and they helped them stay

The importance of sustained support is frequently overlooked by the organizers of hackathons or open-innovation challenges, who tend to focus on idea generation.

on track by asking questions about the status of their collaborations and probing into their challenges—technical and organizational—because they knew that teams might be reluctant to ask for assistance. The mentors made suggestions on project-management issues as well as business and technology ones.

**Holistic mentoring.** Many collaboration intermediaries tend to prioritize helping innovators polish and sharpen their ideas rather than coaching the people collaborating. They consider the creative idea to be essential to the success of the teams and therefore a better focus for their limited resources. However, research on cross-disciplinary teams has shown that team dynamics need to be managed if collaboration is to be productive. The intermediary can be most effective by embracing a coaching role and creating safe spaces. That's why entrepreneurial hubs like Impact Hub London, part of an international network of more than 100 hubs and 320,000 entrepreneurs (or Impact Makers, as they are known) look for mentors who can not only help with business and technical skills but also, as its website puts it, "provide holistic support and motivation."

Mentors at Impact Hub London commit to assignments that last three to nine months. As coaches, they provide reassurance and help collaborators define a common language, establish expectations, and agree on roles. Research has shown that all of these activities are critical to successful cross-sector collaboration.

Mentoring the collaboration is also at the core of the programs organized by the Innovation Ecosystem (IECO) at Portugal's Nova School of Business and Economics. One program is Project X, a three-month innovation sprint in which 85 students work with 11 corporate innovation teams from companies in various industries (including automotive, telecommunications, financial services, and energy) on 15 innovation projects. People from IECO mentor the teams on the innovation methodology as well as team dynamics, helping participants build trust and navigate the innovation process. On one occasion a team member dropped out for personal reasons, which seriously lowered the morale of the remaining teammates. Their mentor stepped in to boost their spirits and help them redistribute the workload. In another case a mentor's intervention in conflict management was critical when team members strongly and passionately disagreed. The mentor suggested mechanisms for decision-making and conflict resolution to help overcome the constant arguments that were paralyzing the team.

STEP 3

## *Sustaining and Managing the Team*

The experiences of two ventures we tracked illustrate how crucial it is for collaborations to receive long-term support. In the first, which was established during the Covid-19 pandemic, two UI fellows joined forces to provide health care kits to rural communities in Asia. They were working on tight timelines, and they felt that they didn't have the time, space, and capacity to set up dedicated roles and clearly define responsibilities. That choice ultimately put the collaboration in jeopardy.

By contrast, in the second, two fellows started collaborating to develop solar-powered electric vehicles and soon realized that the work was getting too big for them to manage by themselves. They decided to establish a joint venture in order to provide more structure, accountability, and resources for their team. The two founders believed that was the only way for them to scale up. The first collaboration ultimately moved forward with different partners, but the second is thriving today.

The UI community had created a foundation for trusting relationships that enabled the fellows to work in a flexible manner, keeping bureaucracy and governance to a minimum. But as the collaborations scaled up, their organizational needs became more complex, and addressing them required a renewed focus on building relationships. While the fellows in the first example were aware of the problem, they had neither the time nor the resources to manage it successfully.

Again, this points to an opportunity for intermediaries, which have the legitimacy to guide collaborators through this stage. An intermediary can help in two ways:

**Providing reflective checkpoints.** By creating opportunities for collaborators to get together in facilitated workshops, semistructured calls, or in-person retreats, intermediaries can help venture teams negotiate shifting roles and changing (or even new) relationships, reestablish alignment, and introduce new governance structures.

These checkpoints offer an opportunity for reflection, allowing social entrepreneurs to step back and consider what they've learned in a constructive fashion so that they can implement those lessons.

Checkpoints also help entrepreneurs manage their stress and emotions, as the following stories of two social entrepreneurs outside UI demonstrate. One young social entrepreneur who worked on a health care venture told us that she ended up having a breakdown and terminating her project. "I wish at the time I had a space to share my worries on a regular basis and get support from my peers as well as mentors," she explained. By contrast, the other entrepreneur, who developed a food-waste start-up, described how her network supported her as her venture evolved through multiple phases and team member changes. "I was lucky to have stayed in touch with a couple of mentors I met in the different hackathons and accelerator programs I participated in," she recalls. "As I struggled with team members' engagement, conflicts, and what to do with the idea—for instance, should I try to file for a patent?—I was able to reach out to my mentors. Moreover, later I was part of a network where we could share our experiences and best practices." She lamented that not every founder has the same sort of social network.

The need for sharing and reflecting is why the social entrepreneurship hub Casa do Impacto in Lisbon holds events like the Founders breakfast, where it invites entrepreneurs to an intimate gathering to promote informal connections and knowledge sharing. Similarly, intermediaries like OpenIDEO, an open-innovation platform that one of us (Anne-Laure) has studied extensively, always includes weekly calls when developing communities of social entrepreneurs. They allow community members to reflect on their experience, share their stories, and listen to others.

During one workshop we facilitated as part of our study of UI, the team membership of one venture had changed

By providing reflective checkpoints, intermediaries can help teams negotiate shifting roles and relationships and reestablish alignment.

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so much that most of them had never actually met. Even though the UI fellows leading the collaboration communicated well and had a trusting relationship, the people managing the daily operations of the venture had not yet developed the same. Participating in the workshop was for many the first opportunity they had to build relationships and trust. One UI fellow told us at the end of the workshop that it gave team members the "space to think about what worked, what did not, why rushing it was not helpful, what was our readiness level to make things happen, and in hindsight what we'd have done different."

**Nurturing the ecosystem.** In addition to promoting collaborative efforts, UI aims to create a community of social entrepreneurs linked to a wide network of mentors, investors, and innovators. A thriving ecosystem will enable innovators to scale up their ventures. Alumni of the programs stay connected with one another and form connections with new fellows, sometimes becoming mentors themselves. Potential investors build relationships with fellows, sometimes providing capital for their ventures or helping them secure funding.

That's what happened to 80 Acres Farms, an Ohio-based vertical farm using 100% renewable energy. The cofounder of 80 Acres first met a team from Barclays in 2019 through his participation in UI. When 80 Acres Farms needed to raise funds to build its first commercial-scale production facility, it secured Series A and B investment from Barclays Sustainable Impact Capital, and the bank's team acted as the sole placement agent in the Series B $200 million capital round.

OpenIDEO is focused on social and environmental issues and nurtures an entrepreneurial ecosystem. After a few years of running one-off challenges, in 2016 OpenIDEO initiated the Food Waste Alliance, a network of 80 ventures, along with experts, investors, and other stakeholders. The idea was to give entrepreneurs and innovators the ongoing opportunity to exchange knowledge, prototype, receive feedback, secure funding, and form collaborations. The OpenIDEO team developed an online platform where venture founders can share weekly progress updates and ask questions. Matt Ridenour, who led the Food Waste Alliance, shared resources, invited guest experts, and encouraged participants to share tools, guidelines, best practices, challenges, and even grant opportunities. In-person events, including a series of pitch days that paired funders and investors, were organized at the IDEO office in San Francisco.

Rise Products, a food start-up that upcycles organic by-products, was one of the beneficiaries of that effort. Thanks to the funding it received from another Alliance member, Rise was able to prototype a process for transforming barley waste from beer brewing into flour for baked goods. The two cofounders also participated in a conference organized by the Alliance in San Francisco, where they met other entrepreneurs, including some who would eventually start an upcycled food association that Rise joined. Reflecting on the Alliance experience, one of Rise's cofounders says, "In addition to capital (funding opportunities, prototyping facilities) and access (sharing of existing infrastructure and knowledge), I'd say the most important resources were networking (sharing of personal connections) and storytelling (sharing of experiences). It helped us realize that we were not alone and that people faced similar challenges."

ALTHOUGH SILICON VALLEY celebrates "moving fast and breaking things," that approach is unsustainable. Hackathons and open-innovation challenges can and do generate promising ideas, but they all too often fail to achieve greater impact because most new ventures get too little support for the people dynamics of collaboration. And while some intermediaries, entrepreneurship hubs, and accelerators offer more structured, network-based support in the early phases of new venture ideation and team formation, most provide little support in the medium to long term. That gap represents a big opportunity for people who can provide this support—and a path to reducing the persistently high failure rate for new ventures.

**HBR Reprint** R2402F

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PHOTOGRAPHER DANIEL STIER

AI & MACHINE LEARNING

# Heavy Machinery Meets AI

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Combining digital and analog machines will upend industrial companies.

IDEA IN BRIEF

THE PROBLEM

*Until recently most incumbent industrial companies didn't use the most advanced software in their products. But competitors that can extract complex designs, insights, and trends using generative AI have emerged to challenge them.*

THE SOLUTION

*Industrial companies must develop strategies that fuse what they do best—creating physical products—with what digital companies do best: using data and AI to parse enormous, interconnected data sets and develop innovative insights.*

THE CHANGES REQUIRED

*Companies will have to reimagine analog products and services as digitally enabled offerings, learn to create new value from data generated by the combination of physical and digital assets, and partner with other companies to create ecosystems with an unwavering focus on helping customers solve problems.*

# For more than 187 years,

Deere & Company has simplified farmwork. From the advent of the first self-scouring plow, in 1837, to the launch of its first fully self-driving tractor, in 2022, the company has built advanced industrial technology. The See & Spray is an excellent contemporary example. The automated weed killer features a self-propelled, 120-foot carbon-fiber boom lined with 36 cameras capable of scanning 2,100 square feet per second. Powered by 10 onboard vision-processing units handling almost four gigabytes of data per second, the system uses AI and deep learning to distinguish crops from weeds. Once a weed is identified, a command is sent to spray and kill it. The machine moves through a field

**ABOUT THE ART**
*Daniel Stier is a visual artist who divides his time between London and Germany. His series* How Things Work *turns a creative eye on machinery, viewing science through the lens of art.*



at 12 miles per hour without stopping. Manual labor would be more expensive, more time-consuming, and less reliable than the See & Spray. By fusing computer hardware and software with industrial machinery, it has helped farmers decrease their use of herbicide by more than two-thirds and exponentially increase productivity.

Deere gathers data from all its modern farm equipment, including the See & Spray, as it's being used. In total the company collects billions of measurements on soil, crop, and weather conditions from about 500,000 machines on more than 325 million acres of land. That data goes into Deere's cloud-enabled JDLink system, where it's analyzed and used to generate immediate and future improvements to the equipment and farms. Feeding all that information into machine-learning algorithms and AI enables Deere to create a portfolio of combined digital and analog services for optimal seed, fertilizer, and weed management.

Deere is one of the companies leading the way in the industrial sector. Until recently, incumbent manufacturers of construction and mining equipment and other heavy machinery didn't use the most advanced software in their products. That's no longer true. Today, using generative AI and machine learning, they extract insights and trends from structured and unstructured data—including text, high-resolution 3D images, voice interactions, video, and sound—and create complex designs in seconds.

Having studied industrial companies for more than 40 years, we're fascinated by the way they're now fusing analog machinery and advanced digital technologies. The smartest firms have come to realize that the deepest insights, rather than the most valuable physical assets, will separate the winners from the rest of the pack. But achieving success isn't as easy as installing a computer in a tractor. There are many things to consider first.

The process starts with developing what we call *fusion strategies,* which join what manufacturers do best—creating physical products—with what digital businesses do best: using AI to mine enormous, interconnected data sets for critical insights. Industrial firms will have to figure out how to connect hardware and software, steel and silicon, and humans and machines. In this article we'll describe four kinds of fusion strategies and how to execute them. They all require reimagining analog products and services as digitally enabled offerings and learning to create new value from the data generated by combined physical and digital assets. Just as crucially, industrial firms will need to partner with other companies to create ecosystems with an unwavering focus on solving customers' problems.

## How Fusion Strategy Differs from the Internet of Things

Traditionally, industrial manufacturers looked mostly at sales and marketing data. They analyzed it to see which demographic bought a particular product or which would be willing to spend more on a better product. Digital systems weren't that important. The companies viewed them as a way to lower manufacturing costs or add features, such as Wi-Fi, to existing analog products. Today, however, industrial goods companies must also focus on what happens after the sale—on how combinations of digital and analog products enable positive outcomes for customers. Data on that must be gathered constantly, and insights from it applied in real time to customers' problems.

Like the internet of things, fusion strategy involves a network of physical objects embedded with sensors, software, and connectivity. But fusion strategy goes beyond equipping an analog product so that you can monitor it and collect data from it over the internet. With fusion strategy, you completely reimagine how that analog product could be designed to function if it were built from scratch using every digital tool and functionality available.

Responsibility for fusion strategy is also handled differently in organizations. The internet of things is owned at the functional level, and use cases are straightforward: Managers in operations (such as supply chain coordinators and quality control executives) use the data from sensors to ensure that machinery-based processes adhere to specific industry standards and protocols. Designers build internet-enabled products that generate data that can be used in future iterations of those products. The separate functions don't really have to coordinate their efforts. Fusion strategy, in contrast, is cross-functional. It requires senior-level executives from different departments to work together to determine how sensor data can be harnessed to deliver value to existing customers and to create new products for future customers.

Fusion strategy also generates insights and benefits more quickly than the internet of things does. While the machinery behind the internet of things ensures that data is recorded and logged, fusion strategy applies that data immediately, observing products' use across diverse settings and then leveraging information on it to offer automated, personalized recommendations or experiences to customers.

The business case for fusion strategy is competitive differentiation. It's about experimenting with newer technologies and developing a road map for incorporating them to get an edge. You can see this happening with the automotive companies that are developing self-driving vehicles. They will invest in the internet of things to adhere to safety standards, but the real differentiation they gain is in how sensors, software, and data connectivity are integrated to make their cars perform better than competitors'.

The strategic opportunities presented by traditional and generative AI and other advanced digital technologies fall into four main categories: *fusion products, fusion services, fusion systems,* and *fusion solutions.* Although most companies should start by focusing on fusion products, they should also explore and test the three other strategies. Experimenting with all four fusion strategies will allow them to determine how they can create and capture value, evaluate how other companies' strategies threaten them, and determine how best to allocate their resources.

## Fusion Products

As we've noted, fusion products are designed from scratch to collect and leverage information on products' use in real time. The amount of data they generate is increasingly massive, and companies can apply AI to it in three ways: They can use traditional AI to analyze it for, say, potential product, process, and cost improvements; they can use generative AI to create digital twins of existing products (virtual duplicates that mirror their functioning) and train robots; and they can use the large language models within generative AI to develop proprietary insights that will add value for customers.

Take Tesla automobiles. They were designed from the start to be cloud-connected computers on wheels. For more than three decades incumbent automakers have added digital features to their products, including GM's OnStar, Ford's Sync, and Mercedes's Mbrace, but those features didn't enable the companies to track automobiles in real time, analyze data continuously, and improve vehicles on the fly the way Tesla does. The sensors in every Tesla provide immediate information about how it's performing on the road. AI determines whether it is working optimally or needs fixing, and in many cases Tesla is able to correct problems with software updates. Tesla can stop a door from rattling by tweaking the hydraulics, for example, or it can adjust regenerative braking levels with over-the-air software updates to reduce collision risk.

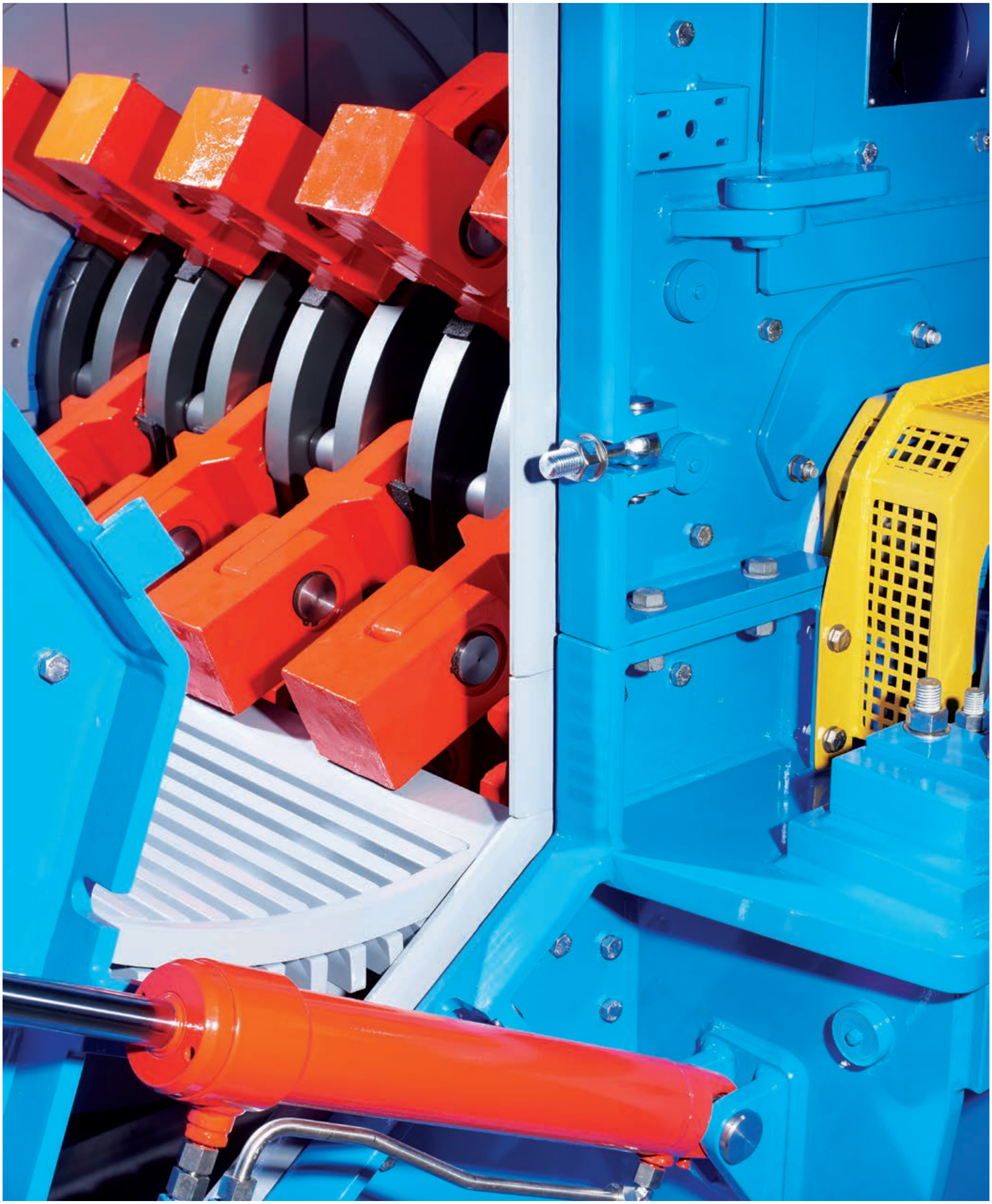
Tesla is now experimenting with using generative AI to program autonomous vehicles. By studying video data taken from inside every Tesla, generative AI can reconstruct multitudes of driving scenarios, which Tesla can then use to train cars to avoid collisions and other dangers.

In each Tesla an operating system, which houses data from all the vehicles, helps it respond quickly to insights from hundreds of thousands of cars. The system integrates three digital twins: a virtual rendering of the car's model as it was designed (the product twin), a virtual version of the assembly line that created it (the process twin), and a representation of the product in use (the performance twin). The system also incorporates insights gathered from Tesla's supply chain, manufacturing operations, and after-sales services.

Tesla's competitors are now trying to catch up by developing their own original fusion products. Mercedes is focusing on designing AI-enhanced operating systems for its vehicles and has teamed up with Nvidia for software, hardware, and AI chips. GM, partnering with its subsidiary Cruise, already has put self-driving taxis on the road. (Although last fall it had to withdraw them after their safety came under question, once GM understands the causes of safety lapses, it will probably resume operating the taxis.)

Fusion products can be found in other industries too. The window manufacturer View, for instance, has developed smart glass that uses real-time data and AI to automatically adjust how much sunlight gets in. When natural light in a room is low, the glass allows more in, but if the room gets too hot, it will filter sunlight out.

Early movers can capture value from fusion products in several ways. The most attractive option is to charge premium prices for them—as Tesla does. Product makers can justify higher pricing if their offerings perform better than those of rivals and cost less to operate. Another option is to offer performance contracts to guarantee that fusion products will be proactively maintained and updated,



ensuring minimal downtime. Rolls-Royce is one company that does this. It guarantees uptime of close to 100% for its commercial airline customers by using AI to monitor and maintain the engines in planes. When something fails on one of its engines, Rolls-Royce knows about it in advance or finds out in real time, which allows it to troubleshoot the problem much more quickly.

Another way to capture value is to use fusion product insights to enter adjacent spaces. Tesla, for instance, has gone into the automobile insurance business and can offer rates that are lower than the competition's because of its ability to record and analyze the behavior of individual drivers instead of clustering them into different risk profiles, which is how other insurers operate.

## Fusion Services

Until now services related to industrial goods have been labor-intensive to deliver, with businesses relying on codified knowledge and standard protocols to fix problems. Though it's more profitable to deliver customized services quickly and in large volumes, doing so was difficult and expensive in the analog world. But today, rather than using an army of on-site technicians to provide services, industrial companies can let customized recommendations generated by AI from product-in-use data flow automatically to customers.

New ventures have already jumped on this opportunity. For instance, weather and climate data from companies such as Weather.com and ClimateAi allows farmers to make precise decisions in a timely manner and enhance profitability. Norm, a ChatGPT app for agriculture, mines available data on weather, soil conditions, and current events to answer all kinds of questions about farm management.

Some established industrial companies have gotten into fusion services too. In the civil aviation industry, improving aircraft engines' fuel efficiency by 1% could save $2 billion a year. Rolls-Royce's R$^2$ Data Labs saves its customers $200,000 per aircraft annually by analyzing the fuel consumption patterns revealed by product-in-use data, such as the routes planes take, the altitudes and speed at which they fly, weather conditions, and the loads they're carrying, and then relaying the insights to customers in real time.

## Traditional Strategy Versus Fusion Strategy

Moving from a traditional strategy to a fusion strategy will require industrial businesses to rethink every aspect of operations, from how they use data, to how they partner with other businesses, to how they serve individual customers. Below is a high-level overview of the main differences between traditional strategy and fusion strategy. This exhibit is not exhaustive. Industrial businesses will find many more differences between how they operate today and how they will operate using a fusion strategy.

| CATEGORY | TRADITIONAL STRATEGY | FUSION STRATEGY |
|---|---|---|
| GROWTH DYNAMICS | Linear, gradual, within industry boundaries | Nonlinear, exponential, across industry boundaries |
| COMPETITIVE LANDSCAPE | Familiar competitors with similar business models focused on product design and delivery | Digital competitors that have new capabilities and focus on product use |
| SOURCE OF SCALE AND EFFICIENCY ADVANTAGES | Physical assets; production | Information assets; data |
| SCOPE FOR EXPANSION | Product-market extensions, vertical integration through mergers and acquisitions | Virtual integration through data integration and partnerships |
| SOURCE AND FOCUS OF CUSTOMER INSIGHTS | Ad hoc surveys and information gathered at point of purchase; operational improvements | Real-time observations and customer outcomes; competitive differentiation |
| DATA AND AI STRATEGY | Enhance efficiency using independent databases, systems of records, and engagements; focus on a single firm; increase operational effectiveness | Develop real-time insights and integrated databases; focus on networks and firms' ecosystems of partners and customers; increase strategic differentiation |

> Today, rather than using an army of on-site technicians, industrial companies can let customized recommendations generated by AI flow automatically to customers.

In their early stages, fusion services can be sold through unbundled pricing, with buyers paying only for services they find valuable. As customers' appreciation for the services grows, industrial companies can migrate to offering bundled packages of services. Over time they could even enter into gain-sharing agreements that give them a percentage of the increase in profits that their fusion services generate.

## Fusion Systems

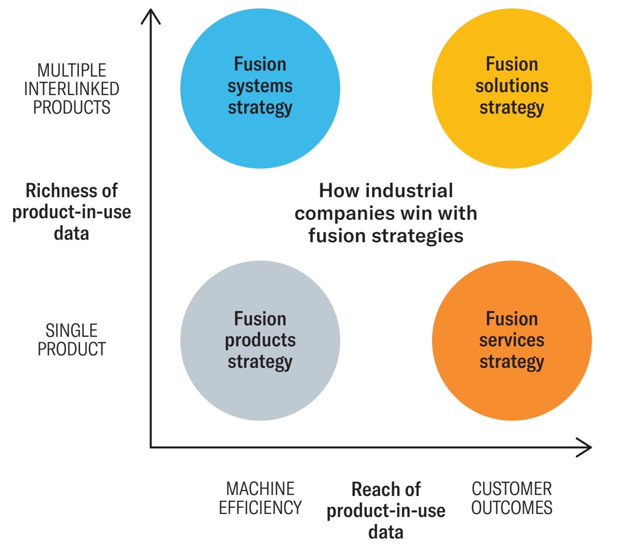
Many customers of Deere and of other makers of farm and construction equipment use complex systems that include multiple kinds of machines, each of which is made by a different specialized supplier. Most customers manage the interoperability of these machines themselves, but some hire systems integrators and consultants to install, connect, and upgrade them. Digitization can make operating them a lot easier. But with fusion systems, it shifts from a micro level (enhancing products from different companies independently to improve their efficiency) to a macro level (enhancing multiple related products from multiple companies in concert to improve the whole system's efficiency).

A fusion systems integrator must not only connect all the machines and equipment it has sold but interlink them with those of partners and competitors. And instead of being responsible just for interconnecting different elements and getting the system to work, as traditional systems integrators are, the creator of a fusion system must ensure that it improves continually as new parts and functionality are added.

This is where AI plays a key role. Most industrial goods companies are comfortable synthesizing structured data such as names, addresses, credit card numbers, and other easily formatted customer information. But the advanced firms feed unstructured data—like images of defects, the sound of faulty machines, and video feeds of autonomous processes—into generative AI in real time to develop complex, realistic digital twins of systems. They can then use those twins to experiment with mixing and matching different permutations of products, machines, components, and peripherals to determine which combination of technologies works best.

### The Fusion Strategy Framework

Companies must ask two questions: One, what is the reach of our product-in-use data? Two, how rich is our product-in-use data? Their answers will help them craft four kinds of fusion strategies: fusion products, fusion services, fusion systems, and fusion solutions. The fusion strategy framework is inherently dynamic. Most companies will start with fusion products, which require the least amount of data to build, and then expand into fusion services and systems as they gain more experience. From there they can work to advance into fusion solutions, which create the most value.




Dubai's Burj Khalifa, the world's tallest building, employs numerous Honeywell systems—for ventilation, air-conditioning, lighting, water management, parking, storage, elevators, telecommunications, and security—in its overarching facilities-management system. Honeywell collects real-time data from the building's intricate system and analyzes it to identify anomalies, such as malfunctioning equipment. It helps Burj Khalifa detect incidents earlier, react faster, and mitigate potential risks. That strategy has reduced the maintenance time for Burj Khalifa's mechanical assets by 40% while improving their availability to 99.95%.

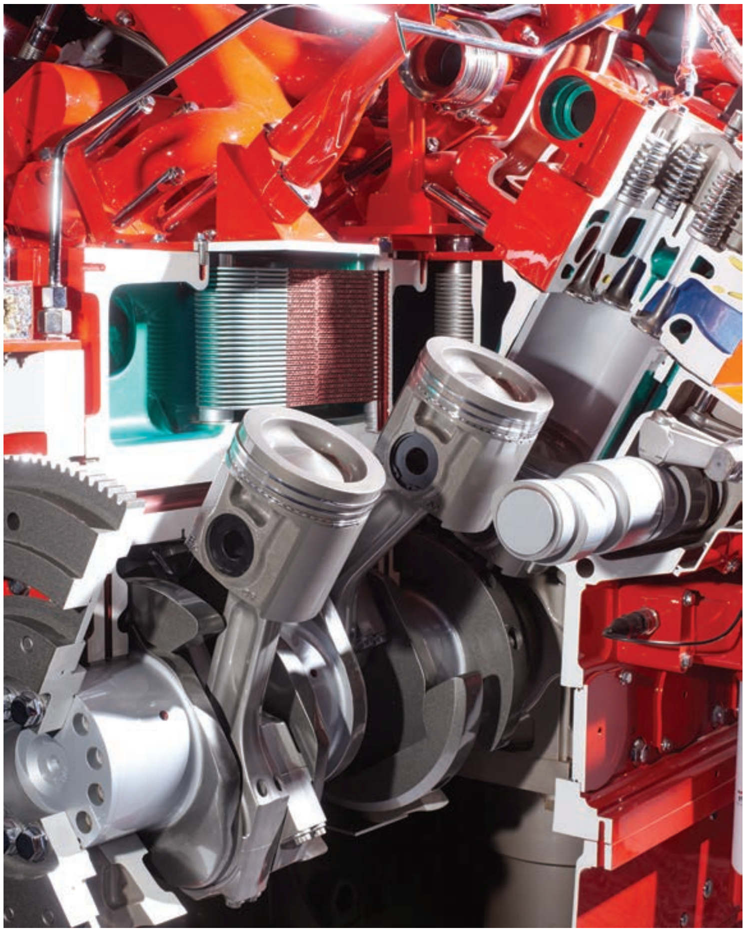
Fusion systems are likely to change the buying preferences of customers. They may shift from focusing on products with distinctive features to focusing on products

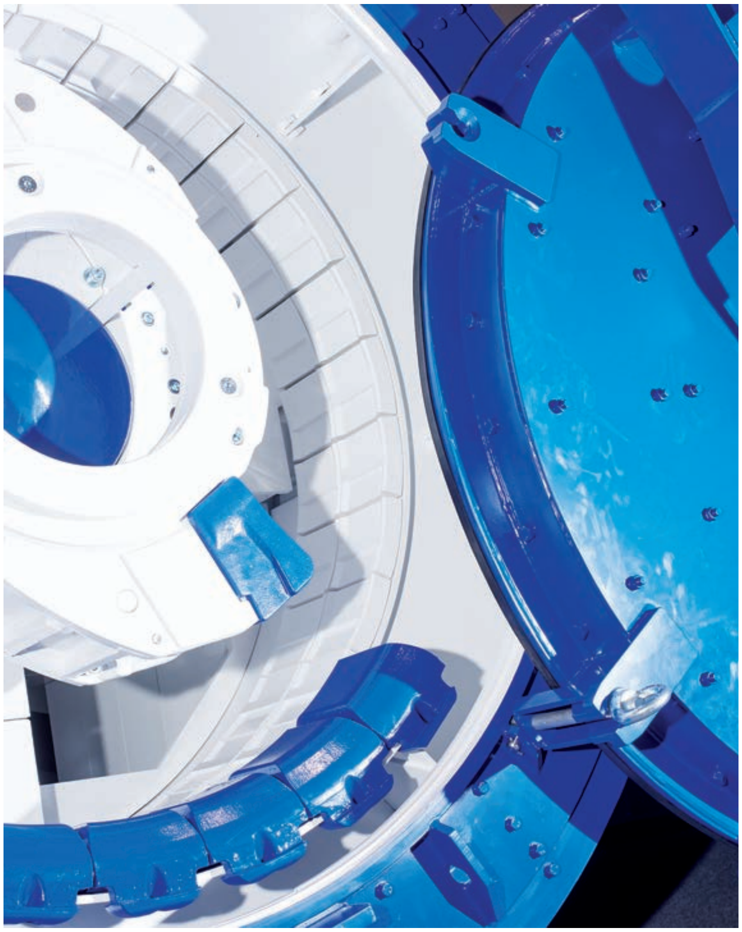
that can be integrated with other products. Because of this, industrial manufacturers must create technology architecture that integrates hardware, software, applications, data, and cloud connectivity and can incorporate product-in-use data and algorithms from other products. Industrial companies will monetize the value their fusion systems create through integration fees as well as charges to connect additional machines. They can also generate revenue by selling fusion-systems software as a service through onetime license fees, monthly subscriptions, or a pay-as-you-go model.

## Fusion Solutions

Fusion solutions combine fusion products, services, and systems in ways that directly improve a customer's performance. Rather than developing solutions through traditional consultative sales processes that approach each customer problem as a one-off, companies develop them with insights from product-in-use data and design them to be applicable to many customers. But designing these solutions effectively requires industrial companies to be experts at solving customer problems in ways that no other company can. They must earn an unusually high level of customers' trust, and they should tie their revenues and profits to customer success using outcome-based contracts and profit-sharing agreements (as they may eventually do with fusion systems).

To create the greatest value for customers, industrial companies will have to partner with other businesses to develop ecosystems of solutions. Deere, for instance, has teamed up with the agricultural software company Granular, which uses unstructured data to develop yield models for farmers. Granular's models collect and analyze imagery from satellites, gathering information on weather, elevations, and soil conditions, and combine that data with historical yield statistics to help Deere's customers forecast costs, revenues, and profits. As it sells fusion solutions to the market, Deere will go head-to-head with traditional competitors such as CNH Industrial and AGCO, but it will





also compete with software companies, such as the Climate Corporation, now part of Bayer, and digital giants like IBM and Alphabet. Ultimately, the battle for customers will be between different fusion ecosystems, not individual companies. While each fusion strategy creates pools of value for businesses, by combining them all, fusion solutions will create the most value.

**EVERY INDUSTRIAL COMPANY** will have to develop its own fusion strategy. The first step will be to stop treating human intelligence and machine intelligence as if they were separate. Every function and process can be enhanced if humans and machines work together. The companies that embrace that kind of collaborative intelligence will outperform those that treat AI as an esoteric technology or postpone its adoption.

Until now industrial companies have competed by developing proprietary technologies and integrating vertically. To execute fusion strategies, most will have to partner with digital natives and start-ups on new technologies and applications, but doing so will ultimately lower costs, increase speed, and improve customer satisfaction. This will be a major shift, however, and will require industrial CEOs to lead digital efforts—a responsibility they've usually delegated in the past. Their firms will need a holistic strategy for how, when, and where digital technologies will drive the organization to ensure that everyone in it shares the same view of priorities and resource allocation needs. And every employee will have to embrace digital technology in order for the organization to craft, execute, and adopt a fusion strategy that succeeds.

**HBR Reprint** R2402G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No
JUSTICE
No
PEACE


WORK
OF
ART


I wear
what
I want


NO JACKET
NO TIE
NO ATTITUDE


DON'T
DO
IT


Climate First!



PHOTOGRAPHER SUSAN BARNETT

MANAGEMENT COMMUNICATION

# How Companies Should Weigh In on a Controversy

## A better approach to stakeholder management

AUTHORS

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MANAGEMENT
COMMUNICATION

**On April 1, 2023,** just as the March Madness college basketball tournament was getting underway, the transgender influencer Dylan Mulvaney uploaded a sponsored post to Instagram to promote Bud Light. The backlash was immediate and cut deep. The beer brand was condemned by social conservatives across the United States, who launched a boycott.

In its first public statement, made two weeks after the uproar began, Anheuser-Busch, the brand's parent, avoided any direct mention of the controversy or of Mulvaney, who had been the target of bitter attacks. She made clear her dismay. "For a company to hire a trans person and then not publicly stand by them is worse, in my opinion, than not hiring a trans person at all," she said. The controversy is estimated to have cost Bud Light $395 million in U.S. sales, and the brand lost its place as America's top-selling beer by revenue.

In contrast, consider Natura, the Brazilian cosmetics giant. In July 2020 the company made headlines after it hired the transgender actor Thammy Miranda to promote its Father's Day campaign. Conservatives accused Natura of attacking "family values," flooded social media with hate speech, and demanded a boycott of the company's products.

Natura quickly stood by its decision to hire Miranda, stating, "Natura celebrates all ways of being a man, free of stereotypes and prejudices, and believes that when this masculinity meets fatherhood, relationships are transformed." Brand experts observed that the company's actions were consistent with its history: "Natura has been working with this purpose [inclusiveness, diversity, acceptance] for over a decade," Adriano Sá, a professor at Saint Paul Escola de Negócios, told *UOL Economia*. "The campaign only reinforces the company's positioning."

The backlash didn't seem to negatively affect Natura. Two days after the vitriol broke out, the company's shares had jumped 6.7%, and Natura ended the week with more than 100,000 new social-media followers. And although the entire category suffered in this period because of the pandemic, Natura's online sales shot up 225%.

A first lesson to be gleaned from this tale of two transgender spokespeople is that companies "speak" through their actions. People saw Mulvaney and Miranda as expressions of the companies' values, whether intended or not. Natura's

**IDEA IN BRIEF**

**THE CHALLENGE**

*Given today's widespread social and political polarization, executives need better guidance as they navigate hot-button topics such as gender, climate, and racial discrimination.*

**THE INSIGHT**

*Success at handling these subjects does not mean avoiding public controversy or achieving unanimous support among key stakeholders.*

**THE ANSWER**

*Executives can take stands on issues and skillfully address both internal and external pushback if they acquire a more sophisticated understanding of their stakeholders' concerns.*





**ABOUT THE ART**

*For her project* Not In Your Face, *Susan Barnett photographs individuals who stand out in a crowd by advertising their hopes, ideals, dislikes, or political views in messages on their backs.*

actions were judged to be consistent with its long, visible record of support for diversity and inclusion. Bud Light, in contrast, took many of its stakeholders by surprise. The brand was not widely recognized for its decade-long support of LGBTQ+ rights, so its association with a trans spokesperson came across as a niche message that did not play well with its core consumers. Michel Doukeris, the CEO of Anheuser-Busch's owner, AB InBev, described Bud Light drinkers this way: "One, they want to enjoy their beer without a debate. Two, they want Bud Light to focus on beer. Three, they want Bud Light to concentrate on the platforms that all consumers love, such as NFL, Folds of Honor [a scholarship program for children of fallen members of the armed forces], and music."

A second lesson is that outcomes may be related less to an issue itself than to how the company responds to it, especially in the face of pushback. Natura doubled down on its principle of inclusivity, whereas Anheuser-Busch initially appeared to ignore the issue. (It may be tempting to argue that Brazil is simply more accepting of transgender people than the United States is, but a 2021 study by UCLA's Williams Institute found that the two were virtually identical in their acceptance of LGBTQ+ individuals, ranking 23rd and 24th respectively among 175 countries.)

One point is crystal clear: Executives need guidance about managing their organizations' engagement with societal issues, including hot-button topics such as gender, climate, and racial discrimination. We believe that companies can take a stand on such issues and successfully navigate both internal and external pushback if they acquire a more sophisticated understanding of their stakeholders' concerns. Success does not mean avoiding public controversy or achieving unanimous support among key stakeholders. Rather, it results from adhering to processes and strategies that over the long term will lead to increased competitive advantage and an enhanced license to operate while also helping manage any short-term heat and scrutiny.

We don't provide a simple playbook or easy solutions. We use recent survey research, along with examples from managerial best practice, to provide insights into how to prosper in a world where the private and public spheres are uneasily blending and businesses are expected to address major societal issues. We propose an approach that is both anchored in data and sensitive to values and context. It is intended to help leaders figure out which issues to address and how, ameliorate stakeholder disappointment, and manage any blowback. Data can tell you what your various stakeholders care about, but judgment is needed to carefully consider their conflicting preferences while remaining true to your company's values.

## EXPECTATIONS OF BUSINESS

In three separate surveys, administered in 2021 and 2022 (see "About the Research"), we reached more than 75,000 people in 28 countries. We asked them about the role of business in society, which stakeholder groups' interests should be prioritized, which issues (if any) they believed companies should weigh in on, and how business in general was accounting for stakeholders' interests and performing on key issues.

Even granting that the public may be underinformed about the inner workings of corporations, we believe that people's views regarding the proper role and the current performance of business in society matter, because the public consists of employees, consumers, investors, and voters—the broadest swath of stakeholders. We ignore their judgments at our peril, given their importance in determining a corporation's long-term prospects.

Around the world people are clear about the core economic function of business. Its main job, acknowledged by the vast majority (85%) of those we surveyed, is to produce safe and reliable products, create jobs, create wealth, grow the economy, and drive innovation. But its second job is nearly as important: The societal duties of business were also deemed central by 75% of our respondents. Those duties include, for example, tackling climate change, addressing discrimination, supporting local communities, and stepping in when government is ineffectual. Clearly, societal expectations haven't superseded traditional economic expectations; they are simply being added to business's plate.

These results reveal an optimistic population that assumes business can make a difference. More than 70% of those surveyed, on average, believe that business can have a positive impact on access to health care, the quality of information, poverty, climate change, discrimination, and inequality, with 23% to 31% saying that the impact on those issues could be "game-changing" if business "devoted a significant amount of its attention and resources to solving them."

Unfortunately, the public doesn't believe that business has done enough to address those challenges. We have found big gaps globally between what people think business should be emphasizing and what they think it is doing well on, with its actions to address climate change and poverty, social problems, and supporting communities accounting

### What About the Israel–Hamas Conflict?

How might organizational leaders have applied our approach to this emotionally charged situation?

They could have started by understanding stakeholders' concerns and expectations. To this end, Edelman conducted a proprietary online survey in October 2023 among 3,000 respondents in six countries: Germany, the UK, the United States, India, Indonesia, and the UAE. The country-level data was weighted to be nationally representative for age, gender, and region. Several important cross-national trends emerged.

First, the percentage of people who said they had been personally affected by the escalating conflict ranged from more than a third in the UK to almost 80% in the UAE. Those high proportions suggest that the emotional impact of this situation extended far beyond people with direct, personal connections to those in harm's way.

Second, CEOs who did not address the escalating conflict were more likely to lose rather than gain public trust in every country, but especially in the Western countries, where, on average, those who failed to acknowledge the conflict were more than three times as likely to lose versus gain trust. In communicating about the situation, the most effective thing a CEO could do to gain trust was to offer comfort to people experiencing fear, grief, or anger.

Third, among the employees in our sample, we found a clear mandate for CEOs to safeguard the physical and psychological well-being of their workers. In all the countries surveyed, a majority of employees endorsed the following actions by chief executives:

→ Monitoring the evolving situation and taking steps to ensure employees' safety (average, 77%)

→ Providing mental health resources to employees (average, 73%)

Overall, 32% of employees reported being so distraught about the situation that they had been unable to function at work. Such a level of anguish among a critical stakeholder group cannot go unaddressed. Some CEOs may have felt compelled to do more; those who opted to do less were putting themselves at significant risk of losing trust.

## Despite the rhetoric of shareholder primacy, 73% of respondents globally say that the primary duty of a company is to benefit *all* stakeholders.

for the largest gaps. (See the exhibit "How Is Business Doing on Social Challenges?")

### THE FINER POINTS OF STAKEHOLDER MANAGEMENT

In addition to judging business poorly on societal performance, people across the world have clear views on whether companies should prioritize the interests of shareholders or of stakeholders. Despite the rhetoric of shareholder primacy, 73% of respondents globally said that the primary duty of a company is to benefit *all* stakeholders rather than just to maximize profits for its owners.

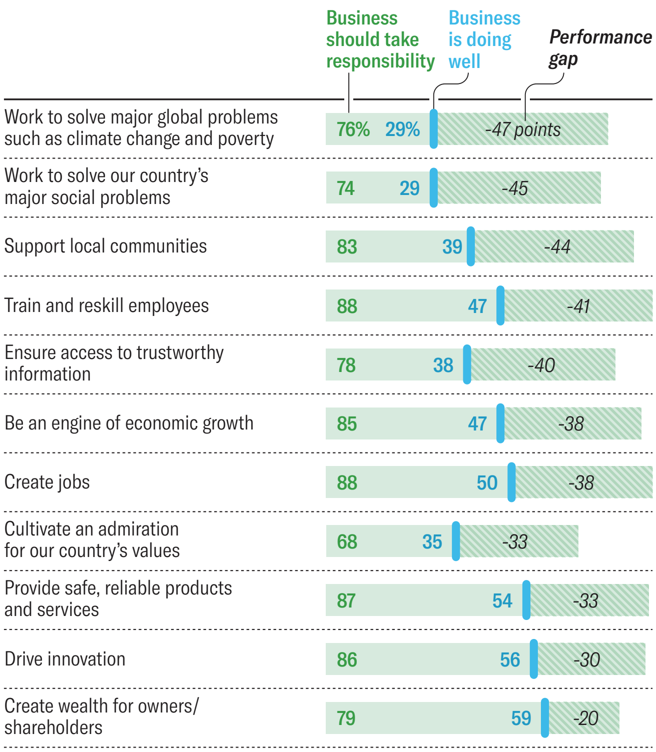
One criticism of a stakeholder focus is that it lacks the specificity of a shareholder focus. In our research we asked people *which* stakeholders' interests should be given high priority in corporate decision-making. Globally, the interests of customers and employees were named most often. When it came to companies' performance in considering stakeholders' interests, a majority of respondents felt that employees, communities, and future generations were not being well served. In contrast, shareholders' interests, though the least likely to be seen as meriting high priority, were the most likely to be seen as being well served. (See the exhibit "Stakeholder Management Is Falling Short.") Clearly, companies need to do more when it comes to stakeholder management.

The first step is to identify stakeholders' needs and interests to ensure that their voices are heard. Because companies have traditionally overemphasized shareholders' interests, they often lack a refined understanding of customers, employees, communities, and future generations. Instead of viewing them as simply consumers of their products or employees of their organizations, companies must consider them as multidimensional human beings who worry about issues that affect them, their communities, and those they care about.

To begin, companies should include an assessment of views on societal issues in their market and employee-satisfaction research. That will help them develop new insights, avoid blunders, and convert their management of those issues into a competitive advantage. They should also do a better job of communicating how they are addressing the issues their stakeholders care about. Only 31% of

## How Is Business Doing on Social Challenges?

Although the public has high expectations for companies, it rates their performance considerably lower.




Source: Edelman Trust Institute

consumers and 51% of employees we surveyed in 2022 said that companies are good at making clear what their values are and how they are supporting those values in society. We have found that when customers are aware of a brand's societal initiatives and see the positive impact of those initiatives, their loyalty and trust increase. Similarly, employees exhibit greater trust, loyalty, and advocacy when a chief executive's social-issue commitments are backed up by action.

If companies regularly monitor the issues that matter to their employees and customers, they can develop a dynamic issue-priority map to identify current areas of stakeholder




accord and potential sources of friction or conflict. Such a map can also facilitate more-effective communication about related company actions.

Inevitably the issue map will reveal topics on which you will be expected to take a stand but your stakeholders do not agree. Thus a second key element in stakeholder management is mitigating disappointment when making tough calls. Listening and responding to stakeholders does not necessarily mean either achieving consensus or granting any one group everything it wants. Given the likelihood that views will conflict among and within stakeholder groups, a company should aim to make clear why it has acted as it has rather than to achieve agreement with what it has done. Still, it is important to make all stakeholders feel respected.

Doug McMillon, the CEO of Walmart, which was the top U.S. gun and ammunition vendor in 2015, became an unlikely advocate for what he called "commonsense" gun control. Many of Walmart's customers objected, but McMillon directed the chain's stores to stop selling handguns, military-style assault weapons, and high-capacity ammunition. Walmart also went beyond federal government rules to establish stricter background checks and age requirements. At the same time, however, McMillon apologized for inconveniencing some of Walmart's customers and stressed his commitment to supporting hunting and sports shooting.

Walmart took a position that respected both its customers' choice to own guns and the concerns of most Americans about specific types of weapons. Its approach was designed to bring disappointed stakeholder groups along with the company. In 2019 McMillon reported that Walmart accounted for only 2% of total U.S. gun sales, which represented just 0.2% of its annual revenues. Pulling back does not appear to have hurt the chain.

How should a company decide which stakeholders to disappoint when goals and expectations conflict? Our data doesn't offer a simple answer, but it does indicate criteria that employees, customers, and communities may use to judge your decisions.

First, no one stakeholder group should *always* take precedence. When we asked our respondents, "Which group should be prioritized if there are conflicting interests?" customers and employees were named most frequently—but only by 20% of respondents. "It depends on what the issue is" was the next most common response, at 14%.

Second, the two stakeholder-oriented considerations you will most likely be expected to take into account are (a) who is most responsible for the long-term success of the company and (b) who is going to be the most affected by your decision. When the answers to both questions are the same, prioritization is straightforward. But often they are


not, which means that other considerations will have to be brought to bear.

We asked people, “If a company is being pressured to decide which side of a controversial societal or political issue to support, what do you think are acceptable ways for that company to behave?” Respondents reinforced the importance of accounting for customer and employee preferences. They also mentioned taking the position that the executive management team believes is the morally correct one and the position that would be the most beneficial to the financial health of the business.

It is no easy task to balance stakeholder concerns, your company’s moral values, and financial-risk considerations, but problems arise when an organization emphasizes any one of them at the cost of the others. Arbitrating the trade-offs is sensitive work that requires managerial judgment.

Target is a case in point. In June 2023 the company featured merchandise that celebrated LGBT Pride month, as it had every June for more than a decade. But that year the pushback was louder and more violent than ever before: Protesters tore down merchandise displays, threatened sales associates, and encouraged people to boycott the chain.

Target’s response represented an attempt to balance three considerations: the need to protect its employees’ safety, its desire to support its many LGBTQ+ customers, and its duty to remain steadfast in its long-held value of inclusivity. The company moved Pride-themed merchandise in U.S. Southern states (which tend to be more conservative) from the front of its stores to less-prominent locations. At the same time, it continued to sell almost all its nearly 2,000 Pride-themed products, removing only a few items, such as a swimsuit with a larger crotch for trans women, which some protesters alleged (incorrectly) was intended for children.

Company executives said they couldn’t tease out the direct impact of the negative reaction on their business, but violent incidents subsided once the changes were made, and overall sales improved in July. Target’s actions illustrate how to be true to your values and to the stakeholders who are loyal because of those values while also addressing the concerns of other stakeholders.

## WHICH ISSUES TO PRIORITIZE?

We found strong links between issue engagement and the key prerequisites for business success. Engagement increases customer loyalty: A majority of consumers (58%) say they buy or advocate for a brand when their values align with its values. Engagement helps win the war for talent: Job seekers say that a company’s public support of issues such as access to health care and gender equity increases

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the likelihood that they will choose to work for that organization. Engagement attracts investors: A majority of retail investors (64%) say they take a company's values and social actions into consideration, while 88% of institutional investors say they scrutinize environmental, social, and governance matters as closely as they do operational and financial ones. That said, our research clearly suggests that people don't expect organizations to weigh in on every issue—or even on every issue important in their stakeholders' lives.

When it comes to determining whether a company has an obligation to take a stand, people divide societal issues into two tiers. In the top tier are issues that directly affect customers and employees; that are associated with where and how the company's products are made and any potential effects of using them; that are related to its core values; and that affect the physical environment in which the company operates. A majority of respondents expect companies to take a stand on such issues.

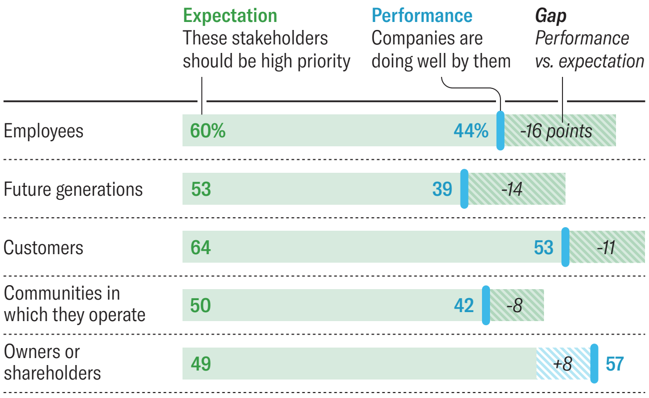
In the second tier, where few people think it's necessary or appropriate for companies to weigh in, are issues that are important to society at large but not directly related to the company's business or business practices; that are important to the CEO personally but not related to the company's business; that the company really does not care about but thinks could help it win new customers; and that the company does not plan to remain involved with over the long term. These lower expectations reflect a general sentiment against virtue signaling, CEO vanity activism, and opportunism.

Many respondents said that companies should actively *avoid* issues related to partisan politics, and close to half of those in the United States, South Korea, South Africa, the United Kingdom, Japan, and Canada said that this is a line business should not cross. Most people neither expect nor want companies to develop an allegiance to a party or a candidate. They understand the difference between weighing in on an issue and getting involved in partisan politics.

When you do engage on an issue, be prepared to fully demonstrate your commitment. People recognize that posturing and action are two different things. They want to see evidence of your commitment to an issue in whom the company hires and how it treats its employees, how its products are made and brought to market, where and how its parts

## Stakeholder Management Is Falling Short

A large number of survey respondents characterized each of the five stakeholder groups below as deserving of companies' serious consideration. Fewer saw business as serving four of the five groups well.




Source: Edelman Trust Institute

and raw materials are acquired, and in which states, regions, or countries it chooses to do business. Thus compartmentalizing your issue engagement or aiming your messaging only at stakeholders who support the stand you're taking is almost impossible.

Managing issue engagement, especially when stakeholders disagree on which issues are important or on what position to take on them, is complicated. To deal with this complexity, companies need new governance structures and organizational practices. One approach is the nested structure Michelin has devised. At the board level a Corporate Social Responsibility Committee ensures appropriate commitment regarding nonfinancial objectives, compliance, and ethics. In addition, the CEO and the executive team provide oversight of Michelin's Sustainable Development and Mobility Committee, which oversees governance in four areas: the environment, human rights, employee health and safety, and ethics. Responsibility for promoting sustainable development on a day-to-day basis belongs to a network of representatives from each major world region, who help roll out local initiatives and report on the implementation of objectives set by the Sustainable Development and Mobility Committee and the governance teams. Senior leaders meet annually to get input from a stakeholder committee of prominent thought leaders representing scientific, governmental, NGO, and other perspectives. Local managers are responsible for stakeholder relations and are expected to engage in dialogue with stakeholders at the local level.

> Contending with discordant opinions on societal issues becomes considerably more complicated when politicians exploit those issues to get media attention.

Embracing another emerging practice, HP and other companies have found that an issues committee, led by a government- or public-affairs officer or a chief marketing officer, can get a companywide view of topics that stakeholders care about. Such a committee can keep track of the status of the company's efforts to address issues and can raise questions about whether organizational values are being considered and how they are being applied in various situations.

Finally, certain practices can help ensure that board members are aware of the views of shareholders, customers, employees, and communities when they make decisions about how to respond to controversial issues. Some practical steps in this regard, identified by The Conference Board, are: making stakeholder engagement an ongoing board agenda item, writing responsibility for stakeholder management into board committee mandates, and ensuring that the CEO is transparent with the board about how various stakeholders view the company. Additional Conference Board recommendations include building shareholder and stakeholder relationships into evaluations of the CEO and company performance and taking seriously board responsibilities to review ESG-related filings with regulators and the underlying reports and activities that drive them.

## FROM CONFLICT TO POLITICIZATION

It's difficult enough to contend with discordant opinions on societal issues, but things become considerably more complicated when politicians exploit those issues to court the more extreme elements of their base and to get media attention. That dynamic raises not only the heat but also the stakes for companies seeking to be responsive to their stakeholders or to remain true to their values.

Consider climate change, on which the science is currently well established and widely accepted by the public. Yet even to admit a link between greenhouse gas emissions and changes in our climate is a litmus test in U.S. politics. Politicization has turned the issue into a flashpoint of divisiveness and the basis for partisan attacks on business. A case in point is a July 6, 2023, letter from three members of the U.S. House of Representatives Judiciary Committee claiming that decarbonization would have a "harmful effect on Americans' freedom and economic liberty" and that any cooperation among corporations to achieve that end might constitute an antitrust violation.

The public recognizes the reality of politicization: In 19 of the 28 countries surveyed for the 2023 Edelman Trust Barometer, fewer than half of respondents thought businesses could avoid being politicized if they addressed contentious societal issues. In the current polarized atmosphere, utterly nonpolitical things can often be politicized. For example, in 2022 the restaurant chain Cracker Barrel announced that it was adding a plant-based sausage to its traditional, meat-based breakfast menu. Strong reactions followed. Some people complained that the company should not be offering meat alternatives and decried the "woke" addition to the menu. A simple, market-driven decision was reinterpreted as a political statement, and choosing to go (or not) to Cracker Barrel restaurants became one as well.

Politicization is almost impossible to avoid in the current environment, but it can be managed. We recommend four strategies that seem to have helped some companies.

**Be diligently and transparently values-driven.** Champion values that are authentic to your organization and work to consistently translate them into actions and policy, as Target did in its decade-long support of the LGBTQ+ community, and Natura did with its long-term dedication to inclusiveness. A history of dependable behavior around an explicit set of values is hard to dismiss as opportunism or as jumping on a bandwagon for commercial benefit.

**Connect your societal-issue actions to your corporate duties.** Demonstrate that engaging with societal issues is not separate from your fiduciary responsibilities but, rather, integral to fulfilling them and staying competitive.

Apple CEO Tim Cook's championing of privacy as a fundamental human right tightly couples a moral stance and a business model. In 2015 Apple's new phones were equipped with a default encryption system that prevented the company and law enforcement agencies from accessing customer data without permission. To some, that looked like a troubling disregard for the company's responsibility to help protect public safety. Cook insisted that he, too, was concerned about safety, arguing that Apple had a duty to protect users' privacy to keep them personally safe.

Privacy protection is a brand differentiator for Apple versus competitors with ad-dependent business models

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that rely on customer information. It aligns the company with concerns about the societal impact of technology and enables it to comply more easily with regulations such as the EU's General Data Protection Regulation (GDPR), which enforces users' ownership of personal data. And it puts Apple in a position to move in concert with the AI-driven privacy regulations coming in countries around the world.

**Push back against politicization.** The key here is to regain control of or redirect the narrative. This strategy has several versions: You can double down on your core values; you can recast the conversation around a value that has wider acceptance, especially among the constituency that is objecting to your behavior; or you can make clear the economic consequences of a culture war.

Disney CEO Bob Iger's answer to attacks on Disney as a "woke" corporation by Ron DeSantis, the governor of Florida and a presidential candidate, shows what can be done. In response to the company's having spoken out against Florida's 2022 Parental Rights in Education ("Don't Say Gay") bill, which prohibited classroom instruction on gender and sexuality for elementary school students, DeSantis pressed legislators into a special session in which they removed Disney's autonomy over the Disney World resort as a special tax district.

Bob Chapek, Disney's CEO when the "Don't Say Gay" bill was introduced, angered stakeholders by first staying silent and then taking a position in the face of criticism within and outside the company. After Chapek was fired, Iger returned to Disney as CEO and took a different approach. At an April 2023 shareholder meeting, Iger refocused the narrative from LGBTQ+ issues to freedom of speech, a key value for conservatives like DeSantis. "A company has a right to freedom of speech just like individuals do," Iger said. "The governor got very angry over the position Disney took and seems like he's decided to retaliate against us...in effect to seek to punish a company for its exercise of a constitutional right." Disney filed suit against the governor and other officials in response to the legislation voiding its district autonomy. Meanwhile, it stayed the course on inclusive content and recommitted to "age-appropriate" stories "that reflect the world around us and that foster a greater understanding, greater perspective, greater acceptance of all people."


## To push back against politicization, companies can double down on their core values or recast the conversation around a value that has wider acceptance.

Iger coupled his accusation that DeSantis's actions were "anti-business" and "anti-Florida" with a description of Disney's plans to invest $17 billion in the resort, creating 13,000 new Disney jobs and thousands more indirect jobs. (The company later scrapped plans for a $900 million corporate campus that would have relocated 2,000 employees to Florida.) Not only did he double down on his commitment to Disney's original position, but he invoked another, more widely held value to support his action while attaching a price tag to attacks on Disney's exercise of free speech.

**Band together with other like-minded corporations.** This fourth strategy is designed for organizations that lack the wherewithal or the mettle to resist politicization and powerful politicians. In the United States and Western Europe, immigration has been a hot-button issue, leading to the Brexit referendum in the UK, wall building in the United States, and anti-immigrant posturing by several European leaders. Nevertheless, businesses have largely supported pro-immigration policies, arguing that structural workforce shortages, exacerbated by demographic trends, require countries to welcome (some) immigrants. One tactic they use is speaking under the banner of national business organizations, either for safety in numbers or to diffuse targeted backlash. For example, during and after the Brexit referendum, the Confederation of Business Industry consistently argued against exit and for immigration. In the United States, the Business Roundtable has consistently endorsed policies that support immigration—at least of skilled workers.

OUR RESEARCH CLEARLY indicates that people across the globe are demanding that companies address the societal issues of the day. A prerequisite for success with that challenge, we find, is a stakeholder perspective—especially regarding customers and employees—along with a clear understanding of, and crystal clear communication about, how your actions relate to your mission, values, and strategy.

As we move from survey data to case studies, we see a pattern: In answering "Who is most affected by the decision?" respected organizations tend to prioritize stakeholders' health and safety over financial considerations. Walmart's gun policy and Target's concern for the physical safety of its workers led both companies to a nuanced approach to politically fraught questions. When it comes to health and safety, threats to life and physical well-being are paramount; threats to mental health stemming from attacks on identity seem to be a close second.

In the end, defining and consistently defending your values, adopting an overarching multistakeholder orientation, practicing effective stakeholder management, and developing rigorous, thoughtful, and fair processes for weighing and balancing the potential impact of your business decisions across stakeholder groups (including future generations) are all necessary if you are to be the company your customers, employees, investors, and neighbors want and expect you to be.

**HBR Reprint** R2402H

### About the Research

This article features results from the following global online surveys:

The **2022 Edelman Trust Barometer** was a 28-country survey of a nationally representative sample of approximately 1,150 respondents in each country in November 2021. The full details and results are available at edelman.com/trust/2022-trust-barometer.

The **2022 Edelman Trust Barometer Special Analysis: The Changing Role of the Corporation in Society** was a 14-country survey of a nationally representative sample of 1,000 respondents in each country from April 26 to May 10 of 2022. The full details and results are available at edl.mn/417tqAt.

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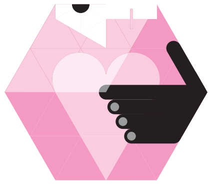

HEALTH CARE & TREATMENT

# Retailers & Health Systems Can Improve Care *Together*

## They should coordinate their complementary services to help consumers and better address the needs of employers and insurers.


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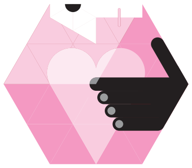


HEALTH CARE & TREATMENT

# The Covid-19 pandemic and its aftermath have starkly highlighted the shortcomings of health care delivery in the United States and many other countries:

rapidly growing costs, inconsistent quality, and inadequate and unequal access to primary and other types of care. However, if retailers and health systems were to forge strong partnerships, they could play a major role in addressing these megachallenges. While some retail–health care partnerships exist—for example, one between Target and Kaiser Permanente in Southern California began in 2014—they are rare and have only scratched the surface of their potential. To fundamentally change how health care is delivered, more of these partnerships are needed, and many of those that exist must be reoriented toward a different goal. Rather than focusing on the direct-to-consumer model that retailers have largely employed to provide a handful of basic services, the partnerships must offer much broader care. They should, of course, target the needs of consumers, but they must also help employers and insurers manage the overall health—and health care spending—of the populations they cover. In this article, we make the case for these partnerships and highlight four key actions that retailers and health systems must take to achieve this larger goal.

## 1 MOVE BEYOND CONVENIENCE TO OFFER COMPREHENSIVE CARE

The health care offerings of many retailers—whether on their own or in partnership with health systems—are mostly limited to routine, one-off services such as taking a strep throat culture, treating an ear infection, or administering a shingles vaccine. Retailers have emphasized convenient care. But now they must shift to comprehensive care.

The focus on convenience can be traced back to the origins of retail clinics over two decades ago. MinuteClinic, now a division of CVS Health, was founded as QuickMedx in 2000 to offer some primary-care services in a retail setting. (One of us, Robert, is an adviser to several private companies in the health care industry, including one that was acquired by CVS.) Walgreens, Walmart, and other retail pharmacies quickly offered similar services. The main purpose of the clinic model, which we call Retail Care 1.0, was to drive traffic into stores, encourage cross-selling, and redeploy idle square footage freed up from commerce shifting online. Services were typically limited to those that could be provided by a nurse or physician assistant. Although these clinics played a critical role in scaling up testing and vaccination efforts during the Covid-19 pandemic, they provided care in the form of isolated episodes that did not involve follow-ups with patients.

Some retailers, including CVS, Walgreens, Walmart, and Amazon, are beginning to move beyond Retail Care 1.0 by adding services such as coaching to manage chronic diseases, primary care, mental health counseling, and home care. For example, a recently announced partnership will allow Costco members to pay out of pocket for simple

> Home delivery giant Instacart recently partnered with care providers to deliver food to patients' homes—including prescription meals for people with hypertension or diabetes.

telehealth services offered by Sesame, an online marketplace for health care appointments. Amazon Clinic similarly provides telehealth video visits that customers seeking "convenient, affordable care for common conditions" can pay for directly. But these offerings still fall short of comprehensive care. For example, they lack integrated services for patients with complex conditions who must regularly interact with multiple providers. Even with the best preventative care, patients will need complex cancers treated, orthopedic surgeries performed, and coronary stents inserted. A close partnership between a retailer and a health system will help integrate the many elements involved in treating more-serious conditions.

Beyond integrated clinical services, partnerships between retailers and health systems could also help address the social and economic factors—often referred to as the social determinants of health—that lead to chronically poor health outcomes for many patients. Several health systems, such as Boston Medical Center and Geisinger Health, have initiated "food as medicine" initiatives to help their patients with diabetes and other chronic conditions access healthy foods. But major retailers, which have much greater experience in managing grocery services—both in stores and via home delivery—could provide those services more effectively and at a much larger scale than a hospital system could. A handful of health systems have realized this. A case in point: Home delivery giant Instacart recently partnered with care providers such as Boston Children's Hospital and Mount Sinai Health System to deliver food to patients' homes—including prescription meals for people with hypertension, diabetes, or kidney dysfunction. (One of us, Vivian, serves as a trustee at Boston Children's Hospital.)

## 2 MOVE CARE FROM CLINICS INTO THE HOME

Although in-store clinics are more convenient and affordable than most medical offices and hospitals, there is a place that is even more so: patients' homes. During the pandemic, health systems dramatically expanded their telemedicine services, but they mainly focused on a limited set of episodic services such as annual physicals, performing triage to determine whether someone needed to go to a hospital, and psychotherapy. More recently, they have begun providing home-based chronic-disease management (to prevent complications that require hospitalization) and "hospital at home" services (higher-level care in the home for patients who in the past would have needed hospitalization). Supporting such care involves more than a laptop and an internet connection; it requires a series of devices to help providers monitor patients and enable patients to monitor themselves. Efficiently equipping patients' homes with such devices is a capability that most health systems lack. Partnerships with retailers could fill this gap.

Consider Best Buy, which has been forging alliances with leading health systems such as Geisinger Health, NYU Langone Health, Atrium Health, and Mass General Brigham. (One of us, Robert, serves as a trustee of Brigham & Women's Hospital, a member of the Mass General Brigham system.) Best Buy's strategy in health care is to serve as the "technology enabler" of in-home care by leveraging the skills of its Geek Squad professionals, whom consumers already trust to install electronic devices in their homes. In its partnerships, Best Buy assumes responsibility for installing and

**IDEA IN BRIEF**

**THE PROBLEM**

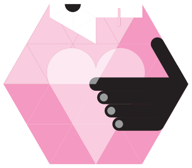
*Health systems are struggling to address the megachallenges facing health care: rapidly growing costs, inconsistent quality, and inadequate and unequal access to primary and other types of care.*

**A SOLUTION**

*Forge partnerships with retailers, which have largely focused on providing consumers with a convenient way to obtain basic care for one-off services such as taking a throat culture, treating an ear infection, or administering a flu vaccine.*

**THE WAY FORWARD**

*Together, retailers and health systems can better provide comprehensive care for complex conditions, offer care in patients' homes, leverage data to improve clinical care and the customer experience, and address the looming labor shortage in health care.*



HEALTH CARE & TREATMENT

> It took 96 hours, on average, from the time a physician prescribed use of a device to its setup in a patient's home. Geek Squad cut that in half.

servicing home-based technology that the health systems recommend for their patients. These include tablet devices from Best Buy's Current Health unit, which supports the in-home collection and reporting of data from a range of third-party devices such as vital sign and activity trackers, glucose monitors, and smart scales. The collected data can be used by clinicians during a virtual primary-care visit and allows for remote monitoring of patients with chronic conditions, such as congestive heart failure and hypertension, and those recovering at home after a surgical procedure.

Best Buy ran a pilot with 300 patients who had complex hypertension and had been admitted to Geisinger's "chronic care at home" program. Using the Geek Squad agents, the time between a physician prescribing use of a device and having it set up in a patient's home—previously 96 hours, on average—was cut in half. In addition, patients were 19% more compliant in using the technology prescribed in their care plans and reported 18% fewer technical issues with their devices.

## 3 LEVERAGE DATA TO IMPROVE CLINICAL CARE AND THE CUSTOMER EXPERIENCE

Retail chains and health systems both collect massive amounts of information about the customers they serve. Many retail clinic chains have the ability to share data about the care they provide to a customer—whether a vaccination or a prescription—with that individual's primary-care physician. Even so, the clinical data held by retailers and health systems largely remains in separate databases.

At the most basic level, an effective retailer–health system partnership would include an integrated electronic health record (EHR) for patients receiving care at each partner's facilities. The partnership between Target Clinic and Kaiser Permanente is notable in this regard: The clinical data of patients treated at both partners' sites is seamlessly integrated into Kaiser's EHR. Such sharing should become more common in the United States under provisions of the recently implemented 21st Century Cures Act, which aims to increase interoperability and data sharing across health care organizations.

For food-as-medicine programs, this exchange of data could allow prescriptions to be filled automatically and delivered to a patient's home by a retailer's online grocery service. Retailers could also offer patients—with their permission—ongoing and targeted reminders about healthier foods or fitness gear. Although there are important concerns about privacy, which we discuss below, there is also the potential for retail and health system partners to create a seamless experience for customers in a manner that improves care coordination and health.

The integration of data about patients' health and consumer purchasing could create opportunities to mine that data to benefit both patients and the employers or insurers that pay for their health care. These opportunities include predicting waves of infectious diseases and guiding certain clinical treatments. For example, researchers applied machine learning to data on consumer purchases at a supermarket chain in Italy to improve the prediction of flu outbreaks. Notably, some of the strongest "signaling" in this model came from purchases of items such as tissues, oranges, and the vegetables commonly used to make soups. Such insights could help health systems and payers accelerate preventative measures, such as encouraging vaccinations, and better plan their staffing and supply chain needs to address local infectious disease outbreaks.

Beyond predicting spikes in disease, combining data about consumers' purchasing behavior (held by retailers) with electronic health records (held by providers) will help develop new and better approaches to treatment. It can provide insights into the links between consumer behavior and the effectiveness of various medical interventions, such as the use of digital apps to manage chronic diseases. Further, it can guide employers and insurers in designing the benefits of their health plan offerings—for example, by suggesting which disease management programs are most effective for a particular employer's workers and their families or for members of a health care plan.

While the case for linking retailers' and health systems' data is strong, it does raise significant concerns around consumer privacy. These challenges are not insurmountable. Indeed, retailers and health systems have experience in complying with data privacy requirements of such laws as the European General Data Protection Regulation (GDPR)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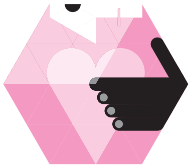



and the California Consumer Privacy Act—both of which apply to online commerce—and the Health Insurance Portability and Accountability Act (HIPAA). To the extent that retailers and health systems can jointly approach regulators to make the case for the value of their partnerships, they have the potential to help shape evolving regulations to allow them to leverage data and analytics responsibly as they manage both the cost and quality of health care.

## 4 CHANGE HOW—AND BY WHOM—HEALTH CARE WORK IS DONE

Retailers and health systems must address health care's looming workforce crisis; they must collaborate to find enough workers and better prevent employee burnout. Labor shortages, a long-standing issue in health care, have become even more acute in the wake of the Covid-19 pandemic. One estimate suggests that the U.S. health-care sector will have a gap of 4 million jobs by 2026, mostly consisting of frontline workers, ranging from nurses to technicians to primary care doctors. A study of data from the 2022 National Nursing Workforce Survey found that 51% of nurses reported feeling "emotionally drained," 56% felt "used up," and 29% agreed with the statement "I'm at the end of my rope." The recent strike by nonphysician union workers at Kaiser Permanente highlights how staffing shortages impact quality of care. Workers to support more care at home are also in short supply.

Retailers can help address the shortage of health care workers. For example, Walmart subsidizes educational expenses for its employees who pursue training for jobs such as pharmacy technicians, opticians, medical assistants, and wellness coaches through its Live Better U program. The program not only supports Walmart's direct efforts in health care but also provides career alternatives for its store employees as more retail sales move to online channels. For their part, health systems could help retailers ensure that the training programs meet quality standards for various health-care roles and could help their graduates find jobs. In partnership, the two can create a new workforce model that delivers care by the right professional, at the right location, and with the right data.

## REALIZING THE POTENTIAL OF PARTNERSHIPS

For retailers and health systems to make the most of their partnerships, they must answer three key questions:

→ **What is our strategy?** To succeed, retail and health system partners must agree on the market need they will serve together and the value that will be generated for each of them. For example, is the goal to increase the catchment area for the health system, bringing access to care to a broader swath of the population? If so, the partnership must be part of a larger network strategy that details how retail clinics could reduce out-of-network visits or trips to expensive emergency departments, thereby integrating care and driving better health outcomes. In addition, to achieve the partnership's goal of expanding access, how could the retailer alter its health-related services (such as its pharmacy or a food-as-medicine program) to meet an individual's needs more comprehensively? If patients are identified in the retail clinic with conditions that then require care in the health system, how would retailers share in the financial gains from the subsequent hospitalization or procedures?

Similar strategic questions should be addressed for other aspects of a partnership, including health monitoring in the home, developing cobranded clinical programs, and creating analytics systems that use integrated clinical and consumer data.

→ **What skills will each partner contribute?** In developing an aligned strategy, partners must determine the specific functions that each will perform and how those efforts will be coordinated. The first step is to determine what a given retailer and health system are uniquely positioned to do well. For example, retailers are probably better equipped to lead efforts to place technology in patients' homes, and providers are better suited to establish the clinical protocols used during visits by home health aides and visiting nurses. Understanding what each partner does well comes with the equally critical need for each partner to accept that there are some things that it does *not* do well.

There will most likely be certain capabilities that neither party in a retailer-provider partnership is well suited to provide, and so others will need to be enlisted to

Partnerships between retailers and health systems have the potential to change the underlying business models and performance of both parties.

join the venture. Consider the need to deliver health care to patients in or near their homes. Making such a service viable requires expertise in managing a fleet of vehicles equipped to provide nonemergency clinical services. This is not a capability that either retailers or existing health care providers tend to possess. Enter companies like DocGo, which has established a partnership with Dollar General to put vans in store parking lots and also works with provider organizations, such as Visiting Physician Services, in New Jersey, to transport clinical providers to patients' homes.

Another example is the use of drones to deliver essential health-care products to patients, on demand, in their homes. Walmart is working with Zipline, a drone-delivery specialist, to deliver health products, such as thermometers and over-the-counter medications, to customers' homes in minutes. Intermountain Healthcare, a large health system based in Salt Lake City, is also working with Zipline to deliver necessary medicines in the same manner. While it is impressive to see what retailers and health provider systems are doing separately with third parties like DocGo and Zipline, it is hard not to wonder how much additional value could be created if retailers and health systems in a given area were to approach these third parties together. For instance, such a service could provide even greater convenience and efficiency by delivering drugs, food as medicine, and other retail products together.

→ **How will employers and insurers pay for the value created by the partnership?** To move toward a robust model, retailers and health systems must focus on helping employers and insurers manage spending while improving population health. For example, retailers and health systems, working together, could manage information about a patient's care episode as she moves from an initial visit in a retail clinic to subsequent care in the hospital followed by recovery in her home. By coordinating care, retailers and health systems could reduce costs—for example, by avoiding complications and costly readmissions—in ways that could lead to lower health care bills for employers. They could move away from the fee-for-service model that dominates retail clinics, physician offices, and many hospitals and move toward subscription models that would pay the partnership a fixed amount per member per month to cover nearly all health care needs. In doing so, these partnerships could provide employers with additional options—beyond existing health insurers—for providing coverage to their employees.

TO DATE, PARTNERSHIPS between retailers and health systems have fallen short of their potential to improve population health. That's because each party has remained in its comfort zone, focused on preserving its core business. For many retailers, the priority is still bringing customers into their stores; for many health systems, it's attending to high-acuity patients and keeping hospital beds as full as possible rather than providing holistic care. Retailers and health care systems must move toward a model that produces better health outcomes for populations, not simply more health care.

If retailers and health systems can work to implement the four actions we discussed, they can reduce health care costs while improving access and quality. They could make the care they provide more comprehensive and provide it closer to patients, even within their homes. They could generate insights from new sources of integrated data. They could redesign the work and the workforce required to better deliver health care to patients. If they focus on these priorities, partnerships between retailers and health systems have the potential to change not only the underlying business models and performance of both parties but also those of the broader health system. They could generate improvements that would benefit not just patients but also the organizations that pay for their health care.

**HBR Reprint** R2402J

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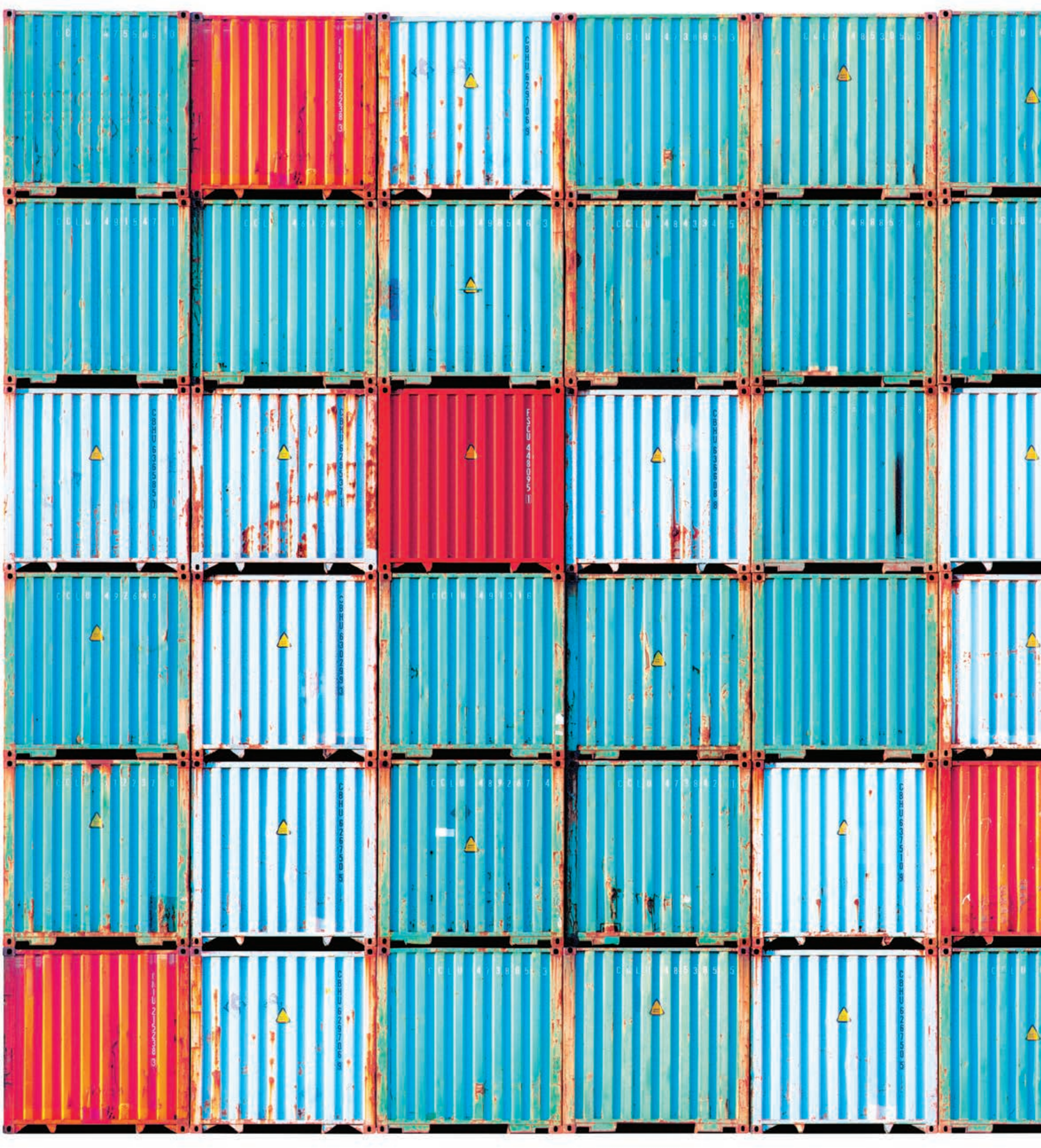

PHOTOGRAPHER **DIDIER ENGELS**

SUPPLY CHAIN MANAGEMENT

# How Machine Learning Will Transform Supply Chain Management

## It does a better job of using data and forecasts to make decisions.


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## IDEA IN BRIEF

**THE PROBLEM**

*Flawed planning methods make it extremely difficult for companies to protect themselves against supply chain disruptions.*

**A REMEDY**

*A new approach, called optimal machine learning (OML), can enable better decisions, without the mystery surrounding the planning recommendations produced by current machine-learning models.*

**THE ELEMENTS**

*OML relies on a decision-support engine that connects input data directly to supply chain decisions and takes into account a firm's performance priorities. Other features are a "digital twin" representation of the entire supply chain and a data storage system that integrates information throughout the supply chain and allows for quick data access and updating.*

**ABOUT THE ART**

*Belgian photographer Didier Engels photographs docks, cargo hulls, and shipping containers throughout Europe. For these images he took aerial shots of colorful containers and manipulated them to create striking compositions.*

SUPPLY CHAIN MANAGEMENT

**The Covid-19 pandemic,** the Russia-Ukraine conflict, trade wars, and other events in recent years have disrupted supply chains and highlighted the critical need for businesses to improve planning in order to be more agile and resilient.

Yet companies struggle with this challenge. One major cause is flawed forecasting, which results in delivery delays, inventory levels that are woefully out of sync with demand, and disappointing financial performance. Those consequences are hardly surprising. After all, how can inventory and production decisions be made effectively when demand forecasts are widely off?

We have developed a way to address this deficiency. Our new paradigm uses machine learning and historical data to generate superior recommendations for supply chain decisions. While current machine-learning methods focus on trying to create more-accurate forecasts, ours focuses on making actual decisions. This new methodology, which we call *optimal machine learning* (OML), involves using artificial intelligence technology to create a mathematical model that takes key data inputs related to the supply chain (the nodes of the network, their locations, sales and shipment transactions, financial parameters, marketing promotions, logistical and capacity constraints, and so on) and links them to planning decisions (what quantities to produce, for example, or what levels of inventory to stock at each location). This model can take into account a company's priorities (such as the level of customer service it is contractually obligated or wishes to achieve), its budget restrictions, and other resource constraints (such as the availability of materials and labor). The data is stored in a way that enables updating in near real time and quick revision of the calculations that inform decision-making.

We developed OML after decades of researching supply chain management and implementing our resulting ideas at companies in a range of industries: semiconductor equipment manufacturing, aerospace and defense, telecommunications, and computing. In this article we explain why existing supply-chain-planning methods, including other machine-learning techniques, have failed, how our approach works, and what changes in planning teams and metrics are needed to implement it. We highlight our experiences putting OML to the test at two *Fortune* 500 companies where we served as consultants—and where the results demonstrate the potential to increase revenue and product availability with significantly lower investments in inventory.

One of the companies makes and sells capital-intensive equipment for manufacturing semiconductors. To ensure that its customers can keep the equipment up and running, the firm must manage an inventory of thousands of spare parts. In the past, though, it often faced shortages of key components, which led to expensive expedited shipments or disruptive wait times that caused costly outages at customer locations. Frustrated managers frequently scrambled to override the inventory recommendations offered by their enterprise resource planning (ERP) system. The managers relied on their own experience and used data inputs not explicitly incorporated in the existing planning software, but their overrides were subjective, ad hoc, and time-consuming to devise, often compounding their problems.

The other company we'll discuss is a consumer electronics firm that sells, through thousands of retailers' stores, a portfolio of advanced virtual-reality interface devices produced by contract manufacturers in Asia. This firm was building up its process for sales and operations planning and was challenged by the wide range of approaches and data inputs from various

SUPPLY CHAIN MANAGEMENT

stakeholders—suppliers; teams in the company's marketing, production, logistics, and supply sourcing functions; and customers who operated complex supply chains with thousands of retail store locations. High uncertainty in consumer demand led to constant shortages at some retail locations and excess inventory at others.

## Why Agility and Resilience Remain Elusive

Companies across industries have failed to develop effective strategies for preparing their supply chains to withstand unforeseen disruptions. That's because of three significant shortcomings in existing planning methods: flawed, forecast-driven processes; data-related challenges; and ineffective scenario planning.

**Forecast-driven planning.** The most widely used approach for supply chain planning consists of two steps. In the *predict* step, demand forecasts are generated from historical data about sales and orders, information about economic conditions and competitors' actions, and subjective judgments. In the *optimize* step, those forecasts are fed into mathematical models of the supply chain network in order to generate final stocking decisions. This approach, known as predict-then-optimize (PTO), fails for various reasons.

***1. There is no single forecast that all parties agree to use for decision-making.*** At the consumer electronics company, sales managers developed monthly forecasts of aggregate sales, along with forecasts of sales to each retail customer for the upcoming 12-month period. The inventory planning team independently created its own forecast of customer demand, but it did so weekly because inventory orders were typically placed once a week. To manage orders with the consumer electronics company and allocate inventory to its network of stores, each retail customer also developed its own forecast. These customer forecasts often differed significantly from those of the consumer electronics company. Moreover, all the forecasts were made at different points in time and were updated as new information about demand emerged. And the estimates of end-customer demand were often distorted because no one fully understood how marketing promotions implemented by the consumer electronics company or by retailers would affect sales. In situations like this, when multiple forecasts are available, each with its own errors, it is not clear which is the ideal one to use to optimize supply-chain-planning decisions.

***2. The objectives of the various stakeholder groups in the planning process are not aligned, which leads to biased and suboptimal decisions.*** At the consumer electronics company, the sales team typically tended to overestimate forecasts to ensure supply, while inventory teams tended to deflate forecasts to ensure minimal obsolescence. The finance team cared primarily about obsolescence costs associated with unsold inventory. Senior management, of course, cared most about meeting quarterly revenue targets and having minimal capital tied up in inventory. The company's suppliers, for their part, faced production-capacity constraints and the competing demands of multiple customers; as a result, the company was often at the mercy of its suppliers' decisions. Meanwhile, to guard against the danger of receiving insufficient quantities of needed electronics products, retailers often inflated their orders.

Misaligned aims were an issue for the semiconductor equipment maker too. Inventory managers often kept too few parts in stock, hoping to minimize the overall investment in inventory and avoid costly write-offs of unsold items. That was because senior management provided targets for invested capital and write-offs without a clear understanding of the resulting potential for lost revenue.

***3. The methods for deciding how to optimize inventories are flawed.*** The conventional models widely used today don't capture all the intricacies of supply chain dynamics. They generally incorporate overly simplistic algorithms for the optimization step in PTO. And even if advanced "optimizer" tools are used, any errors in forecasting, model formulation, and optimization will compound and lead to poor results.

An additional challenge in planning is that even if perfect forecasts were available, they would not suffice. Decisions about supply orders and shipments to various locations must also consider a variety of factors that will affect key financial and operational performance indicators. Those factors include constraints on resources (such as production, shipping, and storage capacity), customer-specific needs, differences in profitability by customers and regions, and both local and global service-level requirements.

**Data challenges.** It is now feasible to maintain and access vast amounts of data about store-level sales transactions in almost real time. Unfortunately, for companies with global supply chains, accessing and consolidating that data remains a mega challenge.


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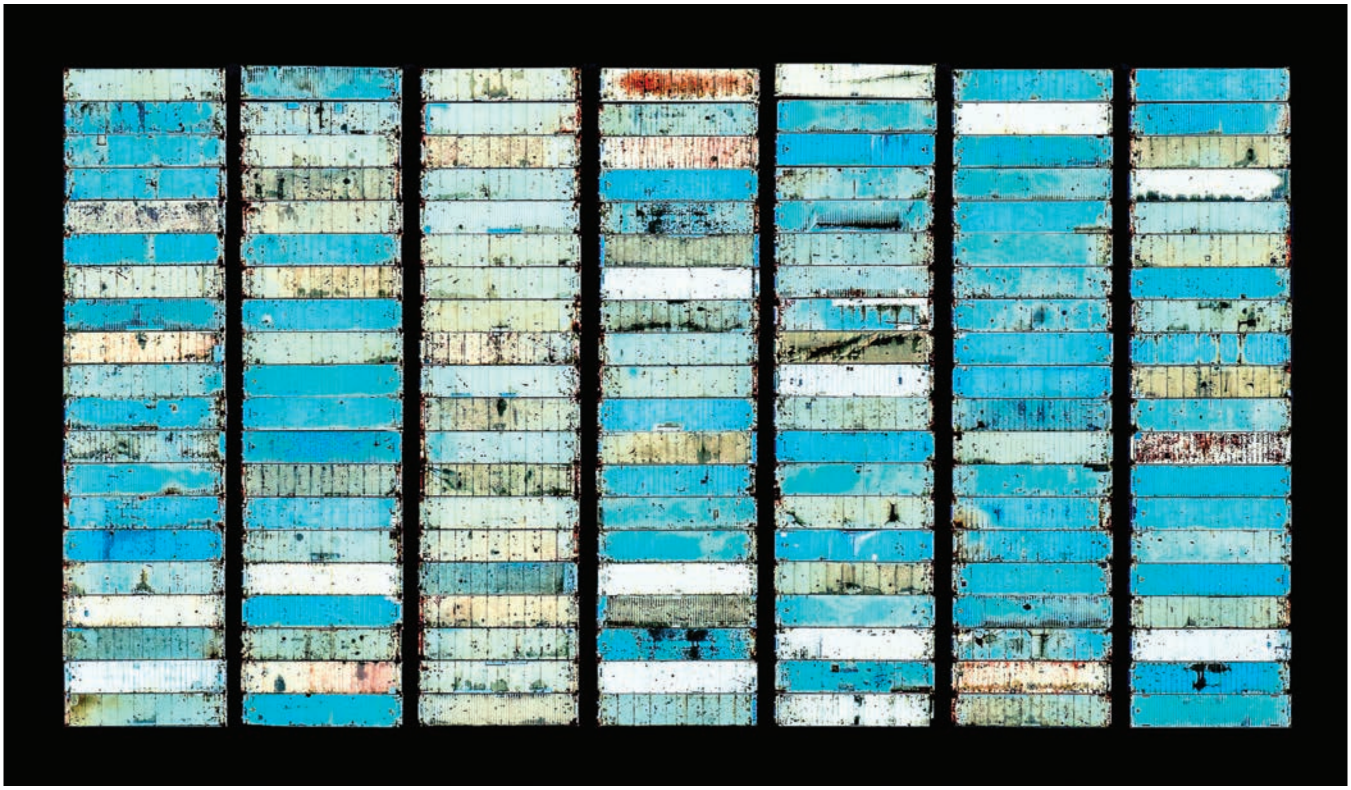
Our approach can incorporate business constraints specified by managers (for instance, “My budget is X” or “I can produce no more than Y units”).



Consider the consumer electronics company. Its supply chain data was widely dispersed among various actors both within and outside the organization. Internally, sales teams maintained forecast information, marketing people handled promotions-related information, the supply planning teams managed inventory information, the finance department had responsibility for financial information, and so on. Externally, data on store sales and on shipments from customers’ distribution centers to stores was under the purview of those retailers. Making matters worse, the data also resided in a variety of formats and repositories—partly in Excel files, partly in Tableau tables, partly in text form in emails, and so on. In some instances, data was maintained at an aggregate level rather than with the specificity needed for decision-making. Because of the scattered nature of the information, there was simply no mechanism for leveraging granular transaction data to support the analysis needed to drive efficient replenishment decisions. Moreover, it was impossible to analyze the impact of various external factors (such as business cycles) and competitive factors (such as the introduction and pricing of new products from rival firms) on the end-to-end supply chain because no single representation of the entire chain existed.

**Ineffective scenario planning.** A first step in developing strategies for making a supply chain more agile (able to respond to disruptions) and resilient (capable of bouncing back) is articulating future scenarios corresponding to the many risks that can affect supply chains. Black-swan events—rare, high-impact disruptions, such as the blockage of the Suez Canal by a container ship in 2021—are virtually impossible to predict. Other threats that can have a major effect on supply chains—such as the Russia-Ukraine war—can be foreseen, but the likelihood of their occurring can be difficult to ascertain.

Although many companies have started incorporating scenario planning into their supply-chain-planning processes, such analysis often lacks sufficient detail to be useful. For instance, it is not enough to know that a company's overall sales can drop in the event of a war that constrains a key supplier's operations. What is needed is a deep understanding of the magnitude and timing of the impact on each product, customer, and region so that appropriate strategies for ameliorating it can be developed. Such understanding is also important for creating bespoke supply chains—those differentiated by geography, products, and customers—rather than using a one-size-fits-all strategy. Unfortunately, absent a mechanism that can offer granular insights, planning exercises often lead to subpar outcomes.

## A New Paradigm

Our approach, optimal machine learning, overcomes the significant shortcomings in existing supply-chain-planning methods. It has three key components: a decision-support engine, a digital twin, and an end-to-end data architecture.

**Decision-support engine.** OML replaces the forecast-based, two-step planning process with a one-step process that connects input data directly to supply chain decisions. The OML methodology incorporates historical data about drivers of demand throughout the supply chain (for example, actual sales transactions and factors that influence them, such as prices, promotions, and the size and composition of the customer base) and drivers of supply (such as supplier inventories, lead times, capacity constraints, and transportation delays). The engine determines the relationship between these supply-and-demand data elements and supply chain decisions about such things as production quantities, replenishment orders, inventory stocking levels, and shipments of inventory between locations in a way that optimizes key performance indicators (KPIs). KPIs might include metrics related to overall profit; revenue or profit by region, customer, or product category; product availability; inventory turns; time needed to recover from a disruption; and so on. Calculations can be recomputed as soon as new data is available or if any changes are made to the supplier network.

Our implementations of OML at both the semiconductor equipment maker and the consumer electronics company leveraged the power of cloud computing to run the decision-support engine. Both produced decision recommendations in minutes, despite the large size of the respective supply-chain networks. Our approach also can incorporate business constraints specified by managers (for instance, "My budget is X" or "I can produce no more than Y units" or "The availability of my product has to be greater than Z%"). A lot of traditional machine-learning approaches ignore such limitations. As a result, the solution has to be "fixed" after the fact, which is not ideal. OML does not face that problem.

**Digital twin.** A key requirement for the OML decision-support engine to work is a detailed digital representation of the entire supply-chain network, all material flows, and the decision-making processes of all involved parties. By modeling the performance of the supply chain in a highly detailed manner at the granular level of each transaction, the digital twin allows supply chain planners to quantify accurate KPIs for both past and future demand-and-supply scenarios.

Such a digital representation has two advantages. First, its calculations of the impact of historical decisions can be compared with the actual results computed by existing business systems, which validates its ability to measure performance accurately and thereby gives management confidence in the system. Second, it can be used to test the effects of alternative supply-chain scenarios or strategies on KPIs. For example, what if the shipment lead times double because of slowdowns in a specific shipping lane? Or how would the disruption of a distribution center affect revenue? Or what would be the best way to reroute shipments to stores served by that distribution center? Together, these two capabilities—historical analysis and predictive power—make it possible for managers to accurately evaluate risk-mitigation strategies, such as alternative sources of supply and transportation, alternative stocking locations, revised production schedules, and the use of product substitutes. As a result, managers can make better decisions.

**End-to-end data architecture.** The OML decision-support engine and the digital twin require a data storage system that works in conjunction with all existing database-management systems throughout the supply chain (those for the company's operations and those of suppliers, distributors, and customers). The storage system should be able to pool data across teams, locations, and products and make it possible to update and access that information in near real time.

The architecture specifies the various data elements to be included, their storage format and organization, linkages between them, and the frequency with which they will be updated. The choice of data to be incorporated should be driven by the analytical representation of the supply chain in the digital twin and should consider input from the managers who best understand the potential drivers of decisions. In other words, the OML approach entails the collection and storage of data that reflects the supply chain structure. We recommend using a graph database that houses the data at nodes in the supply chain (for example, retail stores or wholesale locations) and captures important relationships (for example, which wholesale location supplies which retail stores). This allows meaningful visualization of data and metrics by location, customer, product, or time. It also enables supply chain planners to measure performance for multiple metrics related to cost and service and to identify instances when the observed values fall outside the expected range and require further analysis.

This approach is in stark contrast to one that uses all available data, regardless of its business relevance. Some companies have chosen to "throw everything in" while developing machine learning models in the belief that the models will figure out what data matters most and then weight it appropriately. The problem with that approach is that the model is perceived as a black box, and when decision-makers can't understand why it produced the results it did, they often don't trust it.

## Driving Results

At the semiconductor equipment company, the OML methodology was used to determine specific inventory policies that could lead to higher service levels (the fill rate) at a lower cost. (In any supply chain, higher levels of product availability require greater investments in inventory, which increases costs.) Prior to the deployment of OML, the company's legacy planning system could maintain a fill rate of about 77% with inventory investments of a little over $135 million. When managers used their expertise to override the system's recommendations, they were able to increase the fill rate to about 81% with a slightly higher inventory investment. The OML system gave the company the choice of achieving this higher fill rate while spending nearly $20 million less on inventory, or increasing the fill rate to nearly 85% while keeping the inventory investment at about $135 million. Moreover, the system freed up managers to focus on more-strategic issues. The visualization capabilities of the digital twin helped them understand exactly what needed to be changed and why, which increased their willingness to accept the recommendations. For instance, a key insight was that OML's decision rule considered the number of existing product installations along with new ones and captured their effects on inventory deployment decisions—linkages that had not been factored in previously.

In the case of the consumer electronics company, the OML model revealed glaring deficiencies in how inventory was being managed. For example, the distribution center that served the region with the highest sales volume had historically stocked the least amount of inventory. That led to frequent shortages at stores it supported, as well as expedited shipments to the center. The OML model correctly identified this discrepancy and recommended the optimal inventory-stocking policy for that location. Our analysis also revealed that while the average level of product availability at most retail stores was acceptable, a significant number of stores experienced severe shortages. It is important to note that while the OML model captured the entire network down to retail locations, all decisions about inventory deployment at customer distribution centers and retail stores were made by the customers, not the consumer electronics company. However, thanks to the model's insights into inventory deployment, the company was in a stronger position to influence its customers' inventory decisions. The key enabler in the conversation was an easy-to-interpret visualization of the model's decision recommendations that showed exactly which drivers were responsible for them. Such visualization is critical to securing the buy-in of all stakeholders.

## Succeeding with the New Approach

For an analytics-enabled tool like OML to be helpful to companies in building agility and resilience in their supply chains, it must be accompanied by an appropriate

It is important for senior managers to ensure that all parties trust the recommendations that come out of the planning system and don't feel the need to review them.

organizational structure, personnel with the right skills, changes in the planning process, and a detailed understanding of the potential and pitfalls of machine learning.

First, senior executives should ensure that the planning team, from the outset, includes a broad range of internal and external stakeholders. Defining the OML objective, capturing business constraints, and identifying KPIs and relevant data will require functional experts and operations research analysts with sufficient experience in modeling supply-chain-management problems. This means that the team should include people from marketing, sales, finance, supply chain logistics, production, and IT; data scientists and analytics experts are also crucial. If necessary, the internal expertise of an organization should be supplemented by outside consultants and academic experts. Some companies delegate machine learning projects solely to data scientists. That is a mistake, because data scientists usually have minimal familiarity with the supply chain domain.

Second, OML requires companies to identify, assemble, and access the required data inputs from multiple sources and to verify the outputs generated by the machine learning model. The former requires computer scientists who can construct the necessary end-to-end data architecture using modern database systems, while the latter requires supply chain planners and managers with sufficient domain knowledge and experience.

Third, the sales and operations planning (S&OP) process, in which members of the planning team come together to develop sales, production, and inventory plans, must be redesigned to leverage the agility that OML can offer through its speed and depth of analysis. It is common for the S&OP cycle to be one month long because it takes that long to process information from the previous cycle and reach consensus on actions for the next one. But companies then struggle to respond promptly to disruptions in supply or logistics and to the shifts in demand that occur constantly. What they need to do is replace the typical monthlong S&OP cycles with faster and more-responsive ones. That will require investments in systems and processes that allow supply chains to react with speed, such as cloud-based state-of-the-art solver software systems that can generate solutions within a reasonable time frame (minutes, say, for a particular scenario or policy analysis). Companies thus need expertise in optimization and cloud computing, which they can get from software and cloud solutions firms, respectively.

Finally, the planning team, in consultation with senior management, should establish the KPIs that will ultimately drive decisions within the supply chain. These might include fill rates by customer, product, and region; costs and profit margins; and inventory turns. Understanding the conflicts between internal and external stakeholders and securing everyone's buy-in is important in tackling this step. By providing a detailed analysis of the implications of various decisions for each stakeholder, OML can help. Typically, decisions affecting overall supply-chain performance are made by multiple stakeholders. It would be best if the performance metrics for each stakeholder were transparent and accepted by all parties. Our OML approach allows the model to be run iteratively until it finds a solution that is mutually agreeable. Ultimately, it is important for senior managers to ensure that all parties trust the recommendations that come out of the planning system and don't feel the need to review them.

**OML ALLOWS COMPANIES** to base decisions on historical and current supply-and-demand information rather than just more-accurate forecasts. It gives them a tool that can help them reduce costs and increase revenues, profits, and customer satisfaction. It enables them to test strategies for mitigating risks, making it easier to choose the best ones. By doing all these things, it offers a way to build more-flexible, more-resilient, higher-performing supply chains.

**HBR Reprint** R2402K

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MANAGING YOURSELF

# Negotiate Like a Pro

## Tips from a crisis veteran

by Scott Walker

**PIRATES HAVE KIDNAPPED** six crew members off a ship operating in the Gulf of Guinea, near the west coast of Africa. The corporate owner of the vessel and employer of the victims has called me in from England to help negotiate their release. My first step is to calm everyone down. We can't navigate this situation from a place of agitation and high stress. My second is to choose someone from the corporate crisis team whom I trust to interact with the bad guys—a person who can communicate in the right language and dialect, who seems emotionally stable and resilient, and who, most important, will be able to listen to and connect with the people holding his colleagues. I quickly decide on John.

Over several weeks he and I sit side-by-side in a corporate office, 16 hours a day, with a mobile phone in front of us on the table. Of course, we take breaks to sleep and eat, especially when we're not expecting a call. But our focus is on that phone. And when the kidnappers

*Illustrations by* EUGENIA MELLO

No matter the situation, negotiators must remember one golden rule: *It's not about you.*

do reach out, or we're told to make contact, we turn our attention fully to it.

They initially demand $5 million in ransom. I know from experience and training that if we agree to pay it immediately, they'll ask for more; or they'll take it and then hit another of the company's ships next week. So with my coaching, John begins communicating with the kidnappers.

"That is a lot of money, which we don't have. We need time to see how much we can raise. Let's speak again in two days."

Later, "You seem upset that we can't move faster, but I assure you we are trying our best. Please look after the hostages."

Later, "OK, let me make sure I'm understanding you. If we deliver the cash as agreed, you promise to release and return the hostages unharmed? And no further demands or delays?"

Our aim is not just to stall for time but also to build rapport and trust with the other side. This is critical to success in high-stakes situations. With open-minded, curious, and nonjudgmental conversation, John can ascertain what the kidnappers' real needs are, beyond their surface-level demands, in order to end this crisis. Those needs include respect and a sense of control along with reassurance that they won't be ambushed, arrested, or killed during the handover of the ransom.

Eventually, because he has kept his own ego in check, refrained from hostility, and demonstrated empathy and deep listening, John earns their confidence, and with it the right to influence them and seek cooperation. So they believe him when he says the company can pay only $300,000 and not a dollar more. The deal is struck, the hostages are safely returned, and no repeat attacks occur.

Over a decades-long career as a kidnapping and extortion negotiator, I handled many similarly sensitive cases all over the world. If I wasn't helping secure the release of hostages in Africa, Latin America, or the Middle East, I was confronting extortionist cyberattackers in the United States, Europe, or Asia. Through my experiences, observations, and conversations with other experts in the field, I've developed a deep understanding of what works and what doesn't in high-stakes negotiations. More recently, as an adviser to executives and corporations, I've learned that the same rules can be applied to yield better outcomes in everyday business negotiations—whether you're asking for a higher salary, lobbying for additional team resources, or hammering out the details of a contract with a client or a supplier.

No matter the situation, negotiators must remember one golden rule: *It's not about you*. The only way to move someone else in your direction and find a solution on which you can agree is to listen deeply and empathetically, ensuring that the other person feels seen, heard, and understood. That is particularly powerful when the two sides are in disagreement. It allows you to build trust, manage expectations, and find ways to meet the other party's key needs. It's what I call *level-five listening*, and it is fundamental to effective negotiation.

As Ernest Hemingway once said, "When people talk, listen completely. Most people never listen." Negotiators who do set themselves apart. But it takes discipline of mind and body to accomplish, particularly when emotions are running high. The right mindset and a tool kit of techniques can help.

## THE LEVEL-FIVE MINDSET

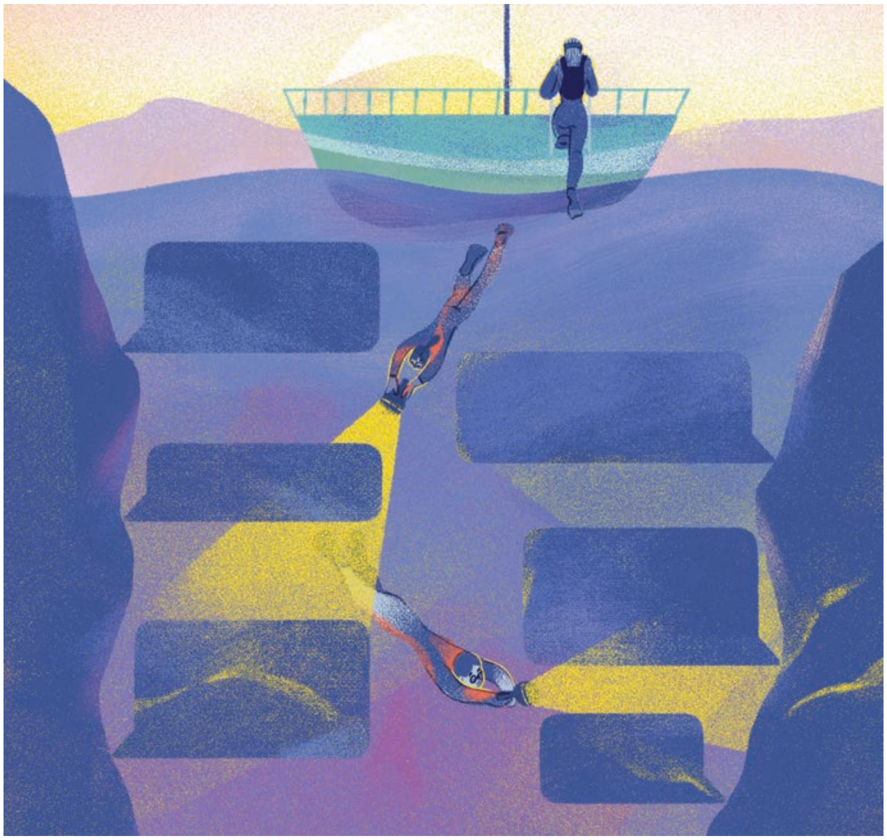
Many people listen only long enough to get the gist of what the other side is saying before they begin formulating a reaction or tune out to check a text or wrestle with another issue in their heads. This level-one listening might be described as "intermittent listening," and it won't help you understand your counterpart well enough to yield a successful outcome. It's also disrespectful.

Level-two listening involves doing so only to rebut. You pay attention to the incoming message until it hits a trigger, at which point you jump in to argue a point. Such an interjection undermines communication and rapport, because you're clearly focusing on your agenda at the expense of your counterpart's.

In level-three listening you're looking for logic: using inference to pin down the substance of and reasons for what the other person is saying. This is an improvement, because you're trying to understand that person's argument, but since it's happening only in your head, it's not enough. The goal is to shift your full attention to your counterpart and gather more information.

That happens with level-four listening, when you begin to tune in to the emotions as well as the logic behind the other person's position and respond in ways that show you're aware of them. You also begin to prompt more dialogue with a comment such as "It sounds like you're frustrated with our counteroffer" or "You seem passionate about this proposal."

Level five takes that empathetic curiosity a step further. Now you're listening to better understand and interpret your counterpart's self-perception and perspective. That allows you to ask questions that promote discovery and insight on both sides and establish rapport so that you can begin



to exert influence and achieve cooperation or collaboration, which should be the outcome of all negotiations.

Some call this "active listening," a term coined by the psychologist Carl Rogers and his colleague Richard Farson to describe a process whereby we "get inside" the minds of our counterparts and truly grasp what they're communicating. "More than that," the two wrote in their 1957 book *Active Listening,* "we must convey to the speaker that we are seeing things from his point of view."

## TOOLS OF THE TRADE

But how, exactly, can you prove to negotiating partners that you're paying this level of attention to their logic, emotions, perspective, and, ultimately, wants and needs so that they begin to see you as a collaborator rather than an adversary? In my world we use the mnemonic **MORE PIES** to remember the techniques for both ensuring and demonstrating level-five listening. This is not a box-ticking exercise but a way to train your focus so that you're better able to understand and empathize with your counterpart.

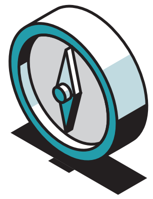
→ **Minimal encouragers**—very short and simple vocal prompts such as "And?" "Really?" "Then?" "Mmm," "Uh huh," "Go on," and "Interesting"—are important ways to show that you are and remain tuned in to your counterpart, particularly when you're on the phone or the other person has been speaking for a while. The aim is to encourage the other person to keep talking and feel understood. Pace your interjections at a reasonable rate (for example, one encourager for every few sentences), and if it's an in-person conversation, ensure that your facial expression and body language match your tone of voice, whether it's inquisitive, neutral, or agreeable. Don't get distracted and throw in a misplaced encourager or overuse words like "Great" and "OK," because they suggest that you understand or agree and can thus bring the person to a stop.

→ **Open questions** encourage people to speak freely and to share their side of the story, thus revealing more about what's important (or not) to them, the lines they can't or won't cross, and areas where compromise might be possible. They help you buy time, gather data, clear up misunderstandings, and defuse emotions, because they force others to really consider their answers and potential solutions, rather than give a knee-jerk yes or no to an idea or unthinkingly choose between options you've presented.

Good open questions start with "What" or "How"—for example, "What is the real issue?" "How will this affect [the party or situation involved]?" "What has to happen for you to [desired action]?" "What other options do we have?" Avoid questions that begin with "Why," because they can sound accusatory and judgmental. For example, with a client who is threatening to switch service providers, instead of asking, "Why do you want to leave?" consider "What are they offering that we don't?" or "What could we do to make you stay?"

Keep it simple and focused on one topic at a time. Avoid jargon and abstract words or ideas. And then, after you've asked your question, stay quiet and give the person time to fully answer. Try also to encourage an exchange of questions, rather than letting it feel like a one-sided interview.

I should note that closed questions, designed to elicit a yes or a no, can be



## Barriers to Effective Listening

**Advising:** You jump in too quickly with solutions.

**Analysis paralysis:** You continue to gather information instead of moving to potential solutions.

**Assumptions:** You go in with strong opinions but few facts.

**Avoidance:** You shut down at any sign of tension.

**Derailing:** You abruptly change subjects.

**Dreaming:** You half listen to your counterpart.

**Experience:** You assume you understand the situation because you've been in a similar one previously or have dealt with your counterpart before.

**Filtering:** You listen to some things and not to others.

**Identifying:** You link everything the other person says to your own experience.

**Judging:** You quickly form closed opinions of the situation and your counterpart based on how you see things.

**Mind reading:** You try to guess what the other person is thinking and feeling rather than simply listening.

**Placating:** You go through the motions of empathetic listening.

**Position:** You don't feel that you and your counterpart are on equal footing.

**Presentation:** You put your own slant on everything.

**Rehearsing:** You focus on what you want to say next rather than what you're hearing.

**Stress:** You're too distracted to listen effectively.

helpful too, particularly when you need specific information—for example, "Do you have another offer on the table?" But too many of them can sound like an interrogation. Leading questions—for example, "Which of our competitors is trying to poach you?"—should be avoided when possible, because they give the impression that you're making assumptions, judging, or rushing to an answer.

→ **Reflecting back,** or mirroring the last few words or key phrases used by your counterparts, is another way to demonstrate that you've heard them, keep them talking, and create rapport. In heated, fast-paced negotiations, it can also give you time to calm your emotions and formulate appropriate responses or open questions. Imagine a cyberattacker threatening to unleash a virus unless he's paid by midnight ("A virus?") or a supplier yelling at you that your company should pay its bills faster ("Faster?").

By carefully choosing which words to mirror, you can also steer the conversation in the direction you'd like. For example, imagine that you're lobbying your boss to add another full-time employee to your team, and he tells you there's no room in the budget this fiscal year. "Room in the budget?" would be a reflecting response that might prompt him to elaborate and provide both of you with an opportunity to discuss other options.

Of course, the other person may misinterpret your repetition as a challenge. But as an easy way to encourage elaboration, reflecting should be part of your tool kit.

→ **Emotional labeling** is a way to help your counterparts rein in their feelings (along with their actions and biases or entrenched opinions), thus preserving their ability to think objectively and rationally. In my field we call this "name it to tame it." It involves offering a nonjudgmental observation about the emotions you think other people are experiencing, the problems they're facing, the way they're acting, or the views they have in a way that allows them to agree or disagree with you. For example, "It feels like you're annoyed with me," or "It sounds like the money is important to you." (Other phrase starters include "It seems like...," "I sense that you...," and "I get the impression that....")

Even if you label the emotion, behavior, or view incorrectly, you're indicating that you're paying attention and want to better understand your counterpart. Every shift in tone, body language, or argument content is another opportunity to acknowledge what the person is going through.

→ **Paraphrasing** involves translating your understanding of what the other person has said into your own words to ensure that you're on the same page. Focus on content rather than trying to use the exact same language (that's summarizing, which I'll discuss shortly). Ways to start include "So it seems like what you're saying is...," "Can I share with you where I think you're at with this?" and "What I'm hearing here is...."

In a kidnapping, paraphrasing would always be used in response to ransom demands to ensure that there are no misunderstandings. It has the same use in business settings. Just make sure to give others a chance to clarify or amend what you've offered back to them by saying something like "Correct me if I'm wrong here..." or "Do I have that right?"

Most often you will wait for a pause in your counterpart's speech to insert your paraphrase. This can be another way to stall for time if you're unsure about where to take the conversation next, but it is also one of those rare moments when it's OK to interrupt to enhance understanding.

→ **"I" statements** allow you to explain how the situation or negotiation is affecting you and encourage your counterpart toward change without

Effective pauses give your counterparts space to collect their thoughts, keep talking, or even vent in ways that can be informative for you.

directing blame. Include three elements: *behavior or situation* (describe what the person has done or what has happened); *feeling* (how it affects you); and *consequences* (what the result was). For example, you might say, "When you dismissed my proposal immediately, I felt frustrated, because it seems like you don't value what I have to offer." While such messages aren't confrontational, they do flag misalignments and potential negotiation derailers that will need focus, attention, and care.

→ **Effective pauses** give your counterparts space to collect their thoughts, keep talking, or even vent in ways that can be informative for you. All you need to do is refrain from responding after they seem to have finished speaking until the pause begins to feel slightly uncomfortable, and then hold it for a few seconds more. I've seen this used to great effect when police officers interview suspects, witnesses, or victims, because most people feel compelled to fill the silence. Inexperienced communicators often find themselves jumping in. If you are one, try to resist. To this day I keep a stress ball with the letters W.A.I.T. on my desk; it stands for both "wait" and "Why am I talking?"

→ **Summarizing,** like paraphrasing, involves offering your understanding of what someone has just said, but the difference is that you repeat that person's words rather than using your own, to help them see their argument more clearly and build trust. This technique is best used when your counterpart has delivered a lot of information or a long, rambling narrative. You're adding value by condensing it into a manageable chunk and highlighting the key points. For example, to the boss resisting your plea to expand your team, you might say, "If I understand you correctly, you don't have the budget in this fiscal year, but a small personnel allocation might open up in the next cycle. So I should write you a memo proposing a job description for a potential new hire. Is that a fair summary?" This gives the boss a chance to correct you.

## FROM RAPPORT TO REQUEST

When you use these techniques to become a level-five listener, you boost your capacity for empathy, your ability to find common ground, and your chances of gaining your counterpart's cooperation. As the forensic psychologist and University of Liverpool professor Laurence Alison explains in his book *Rapport* (written with Emily Alison), "When we are able to extract someone's core beliefs and values, we often find that they are more similar to ours than we imagine." He adds that even if they're not, "we don't have to agree but we should seek to understand." Alison recommends that negotiators hold themselves accountable by asking themselves four questions: Am I being honest or trying to manipulate the other person? Am I being empathetic and seeing things from that person's perspective or just concentrating on my own point of view? Am I respecting and reinforcing people's autonomy and right to choose, or am I trying to force them to do what I want? Am I listening carefully and reflecting to show a deeper understanding and build intimacy and connection?

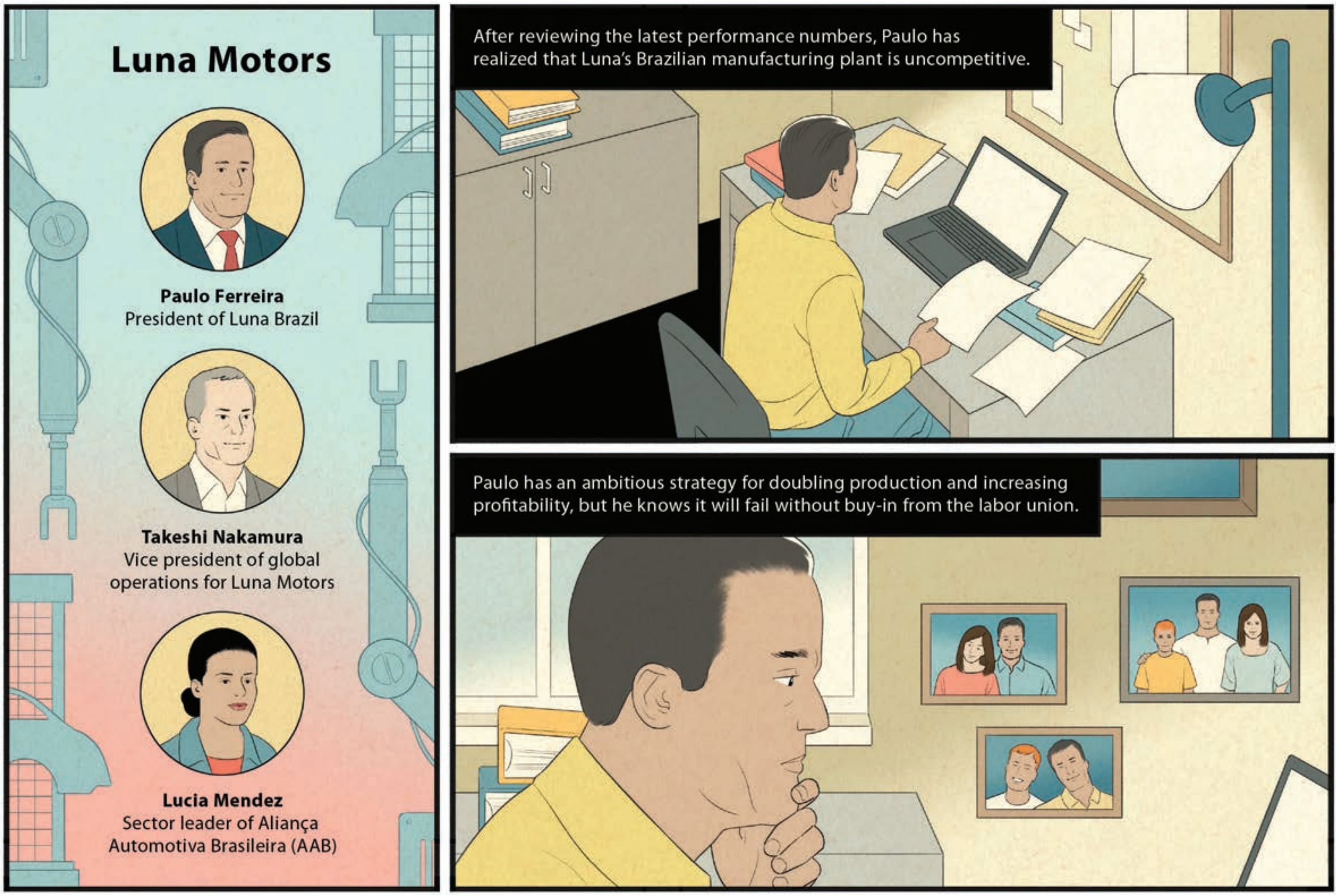
Ultimately, the most effective among us eventually move beyond empathetic listening and the other elements of rapport building to constructive assertions and requests. When you have done the work to fully, unemotionally, and nonjudgmentally understand your counterpart's needs, interests, and perspectives—and to ensure that the person knows and trusts that you've done so—you earn the right to state your own needs, interests, and perspectives; make specific requests; and suggest solutions.

That's what I helped John do with the kidnappers, and what I now do with executives as a leadership and negotiation coach and a consultant in the corporate world. For example, I recently worked with several newly promoted leaders at a global professional services firm who were avoiding difficult conversations with clients. Once they learned level-five listening and MORE PIES, they felt more comfortable negotiating and were better able to achieve deals that worked for both parties. In another case, this mindset and tool kit helped the head of a small banking and investment company that had recently been acquired by a larger one to navigate discussions around layoffs and exit packages with his new colleagues and affected employees.

Successful negotiation starts with managing your own emotions. But that's where your self-focus should stop. The rest is all about your counterparts. Listen well and show them you're doing so. That's how you build trust and ultimately find mutually agreeable solutions.

**HBR Reprint** R2402L

**SCOTT WALKER** *is an executive and team coach based in London. He was formerly a kidnapping and extortion negotiator.*




# Case Study
# Navigating Labor Unrest

by Jorge Tamayo

*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 "Toyota and Its Labor Union in Argentina (A)," (case no. 721394-PDF-ENG), by Jorge Tamayo, Erik Snowberg, and Jenyfeer Martínez Buitrago, which is available at* ***HBR.org****.*

**IN THE CORNER** office at the Campinas plant of Luna Motors, the dim light of a desk lamp illuminated a series of charts. Paulo Ferreira, the president of Luna Brazil, had been so deep in thought he hadn't even noticed that it was now dark outside. Each line, curve, and number on the papers in front of him painted a disheartening picture of the plant's performance: rising defects, increasing absenteeism, and a record high in vehicles lost to labor issues. The plant was no longer competitive within the larger Luna network.

Paulo prided himself on being a problem solver. In business school he'd always come up with the best solutions to case studies. But this was not an academic exercise. Workers' livelihoods—not to mention his own career—hung in the balance.

He was now puzzling over how best to implement his strategy for reversing the trends: investing $1 billion in modernizing the factory and pushing production from 85,000 vehicles to a staggering 170,000 vehicles a year.[1] Though it was ambitious, doubling production would not only help the company meet



*Illustrations by* **ANUJ SHRESTHA**


rising demand for cars but also reduce unit costs, increasing profitability.

Paulo knew that his strategy would fail without the buy-in of one crucial stakeholder: the labor union. In South America unions were more than just collective bargaining entities; they were potent political forces. With 70% of the plant's workers in Aliança Automotiva Brasileira (AAB), getting the union's endorsement was pivotal to any revamp.

While there hadn't been any strikes recently, AAB seemed to be throwing its weight around. The use of the andon cord[2]—which brings production to a standstill—had increased dramatically. Several weeks earlier a gaggle of union representatives with placards had begun gathering at the gates each day to meet the factory's managers on their way to and from work. Memories of a strike a decade ago still haunted Paulo. He had been a young manager then, full of ideas and optimism, and the strike had been his first taste of the power the unions wielded. Production had ground to a halt, and relationships had frayed. Years later they were still not fully healed.

His recent encounters with Lucia Mendez, the sector leader at AAB, hadn't been promising. Paulo had made significant overtures—better overtime pay, more days of leave for junior hires, even subsidized transportation to help workers get to the plant—but each time Lucia had responded with a firm "Not enough." Paulo respected her toughness, but he wished the union would stop seeing the negotiation as a zero-sum game and adopt the more collaborative, progressive approach that he'd seen work wonders in Germany and Japan and even other industries in Brazil.

However, he also felt some responsibility for the poor relationship. When the plant first opened, Luna Motors had ramped up operations too quickly, focused too much on technical prowess over leadership and communication skills in hiring and promotions, and failed to address several legitimate issues about ergonomics and worker safety. Paulo deeply wished for the chance to do a reset and foster a spirit of partnership.

He was also worried about the members of his management team. The strain of the labor agitation and the protracted negotiations was starting to wear on them. Comparisons of the union to "the enemy" had reached his ears. Paulo feared that the lingering resentment might make collaborative problem-solving with the union impossible in the future.

He took a deep breath, collecting his thoughts. He was not one to back down. He had a battle plan to save the plant. He just needed the soldiers to put it into action.

## AN ULTIMATUM FROM HEADQUARTERS

Early the next morning, as Paulo was surveying the factory floor and pondering his next moves, his phone buzzed to life. On the other end of the line was Takeshi Nakamura, vice president of global operations in the Japanese headquarters of Luna Motors.

"Hello, Paulo-san," said Takeshi in his smooth baritone.

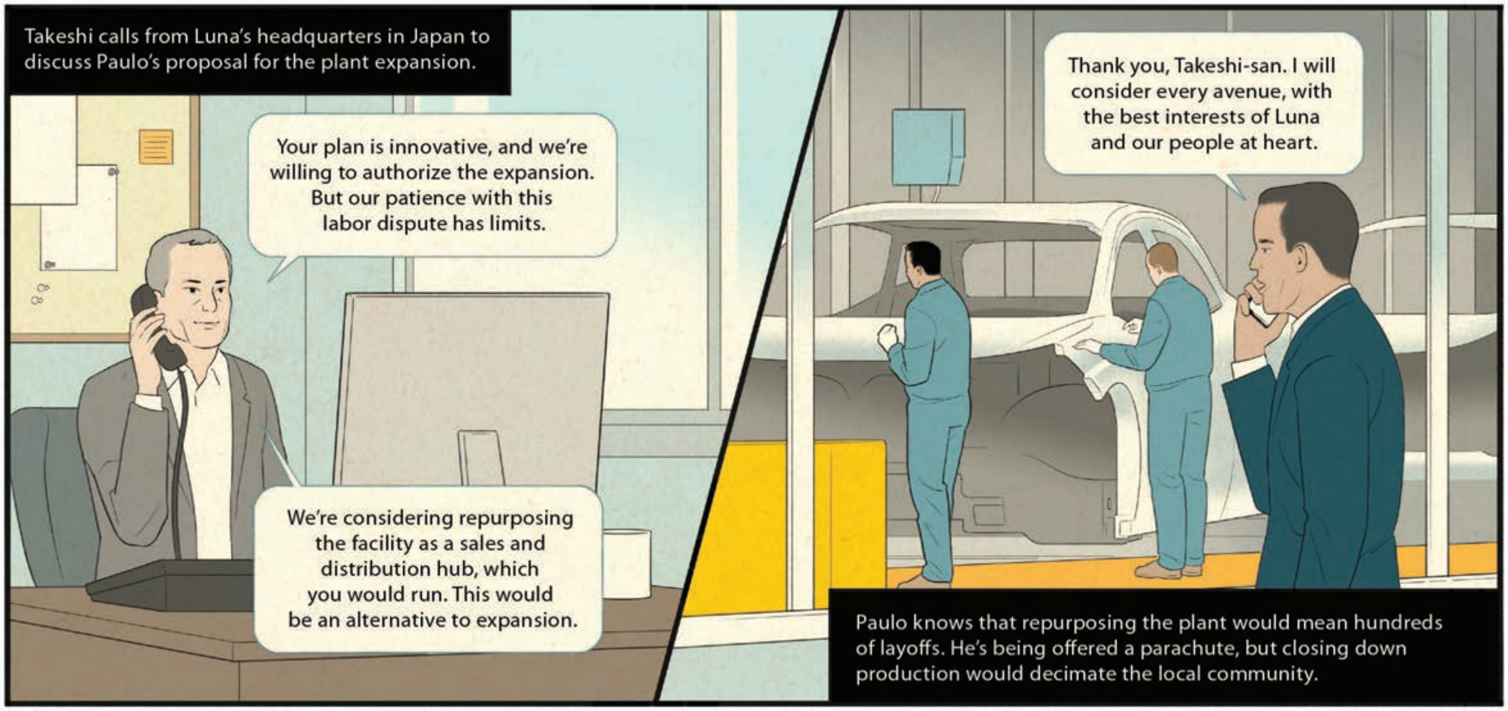
"Good evening, Takeshi-san," Paulo responded, trying to keep his voice steady. "Did you have a chance to look through my proposal for the plant?"

"Your plan is innovative," Takeshi said, genuine admiration in his voice. "We're willing to authorize the loans for the expansion. But we can't wait forever. Our patience with this labor dispute has limits."

### Case Study Classroom Notes

**1.** *What are the potential risks and rewards of doubling production capacity in a manufacturing plant? Explore the implications for stakeholders and the strategic considerations.*

**2.** *Pulling an andon cord (traditionally, a rope) stops a production line. In the kaizen approach, every worker who sees a quality or process concern can do this.*




*3. Reflect on the complexities of managing a subsidiary that is part of a global corporation. How do cultural and operational differences impact strategy implementation?*

*4. During the Cold War many South American unions were involved in political movements, some of which were violently repressed. What role might historical distrust in the region play in determining the union's postures in the negotiation with Luna?*

Paulo tightened his grip on the phone.

"In Japan," Takeshi continued, "our *kaizen* philosophy centers around harmonious collaboration between management and labor. It's not just about continuous improvement but also about trust, respect, and mutual growth. The stories I hear from Campinas trouble me. Disruptions, the threat of strikes—these are not the Luna way."[3]

Takeshi went on, "Our commitment to our employees is deep but not without boundaries. One idea we've been considering is repurposing the Campinas plant as a sales and distribution hub, which you would run. If that happens, our operational presence in Brazil would shrink dramatically, but the margins could be attractive. We'd like to discuss that possibility with you as an alternative to expanding the plant."

Paulo felt a knot in his stomach. He was being offered a parachute—albeit one that would put him in a lower-profile position—but the move would lead to hundreds of layoffs and decimate the local community. Paulo had grown up in the area; after business school he had turned down jobs in São Paulo and New York in order to move home. He felt deeply connected to the community and wondered if he could live with the repercussions of shutting down the production lines.

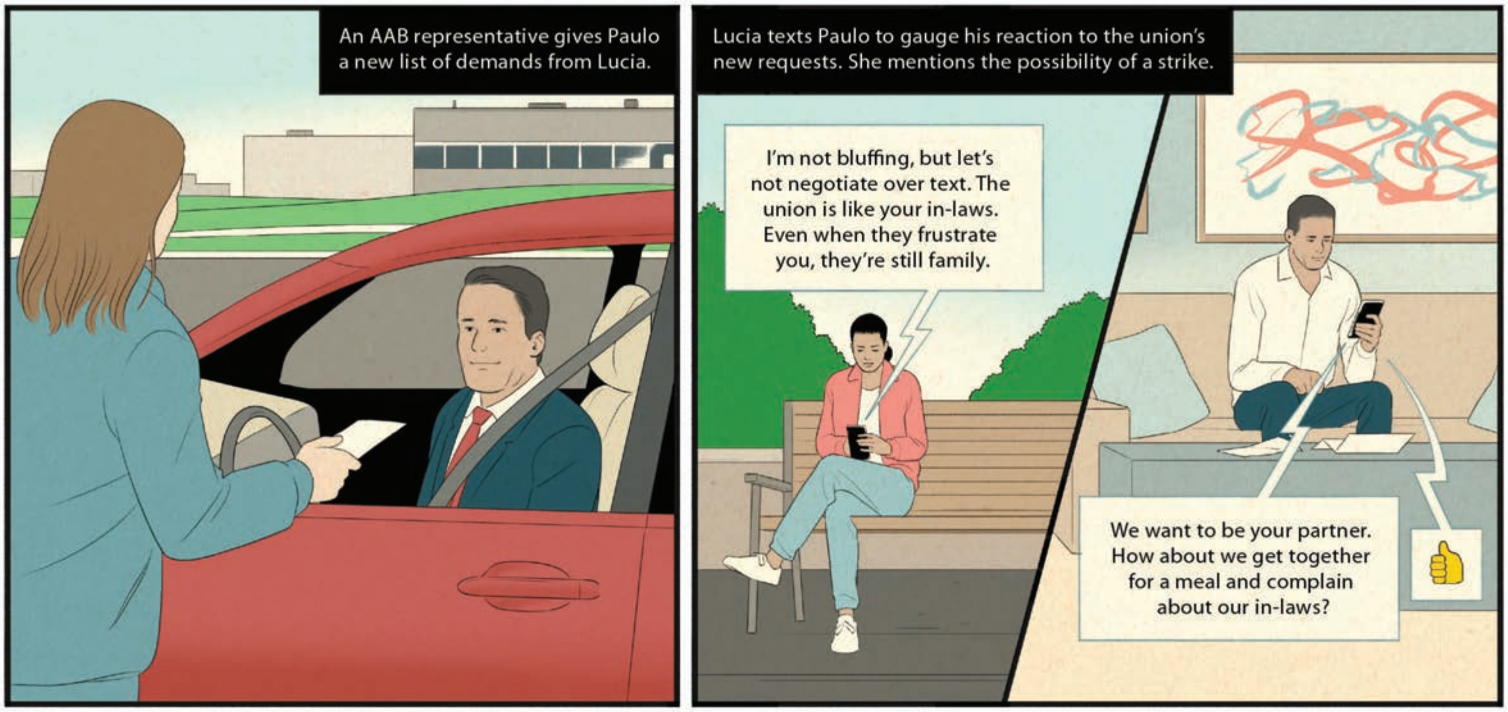
"Thank you, Takeshi-san," Paulo said, his voice thickening with emotion. "I will consider every avenue, with the best interests of Luna and our people at heart."

## THE UNION LEADER'S DEMANDS

In his living room at home, Paulo sat deep in thought. Unsolicited, Lucia, the head of the union sector, had fired the next salvo. It was obvious that she had somehow caught wind of Paulo's expansion plan. That was not unexpected. Lucia was one of the most networked leaders in Brazil—chummy with government ministers and celebrities and a fixture on the nightly news. When the Pope had visited Brazil, he met with Lucia before he met with any politicians.[4]

That evening, as Paulo had been driving out of the building, one of the union members holding a placard had knocked on his window and handed him an envelope with a letter from Lucia inside. Classic Lucia: She always did have a flair for the dramatic.

He perused the list of demands. Some of them he had already offered to meet: an increase in hourly wages and overtime pay to counteract soaring inflation, paid leave for




family illnesses, better ergonomics to prevent injuries, and transportation subsidies for workers commuting from far-off areas.[5]

But now the union wanted more influence in hiring, training, and promotions, citing German unions' rights as a precedent. Paulo worried that giving it more power would entrench mediocrity at his plant. Lucia also wanted assurances that the expansion of the plant would not lead to future layoffs, something that seemed impossible to provide, considering his conversation with headquarters. Most troubling of all was the demand that no artificial intelligence or algorithmic decision-making be introduced into production without the approval of the union, to ensure that AI would not be used as a substitute for workers.

Paulo shook his head. That was a totally unreasonable request. Though AI was still a frontier technology in car production, who knew what advances might emerge as cars increasingly became "computers on wheels"? His ability to make quick decisions to stay competitive could be undermined by a participatory process.

He wasn't even sure whether the union was negotiating in good faith. Just last week, in an interview with a local news channel, Lucia had referred to Luna as a "corporate villain" and painted the union's struggle as a fight against greed. He knew that Lucia had political ambitions. Was she actually hoping for a deal, or would she throw her own workers under the bus to be seen as tough and further her political career?[6]

His phone buzzed. It was a text from Lucia. "Thoughts?" it read.

He hesitated for a moment before typing, "I'm thinking some of these requests are unreasonable."

Her response was instant. "That's a shame. I guess you want a strike?"

Memories from the last strike, of a cacophony of shouting voices, angered faces, and idle machinery, flashed through Paulo's mind. "You're bluffing," he responded. "Would you really send your workers to the picket lines now, when the future of the plant is at stake?"

"I'm not bluffing, but let's not negotiate over text," was her reply. "The union is like your in-laws. Even when they frustrate you, they're still family."

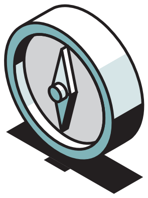
Paulo smiled. Lucia certainly could be charming. "We want to be your partner," he wrote back. "How about we get together for a meal next week and complain about our in-laws?"

Lucia sent back a thumbs-up emoji.

*5. Sequencing is important to dealmaking. One approach is to tackle major issues first. Alternatively, starting with simpler matters may build momentum and trust.*

*6. Savvy negotiators seek to understand each party's best alternative to a negotiated agreement (BATNA), which helps dictate how aggressive they can be. Sometimes, however, a counterparty's BATNA is not clear.*

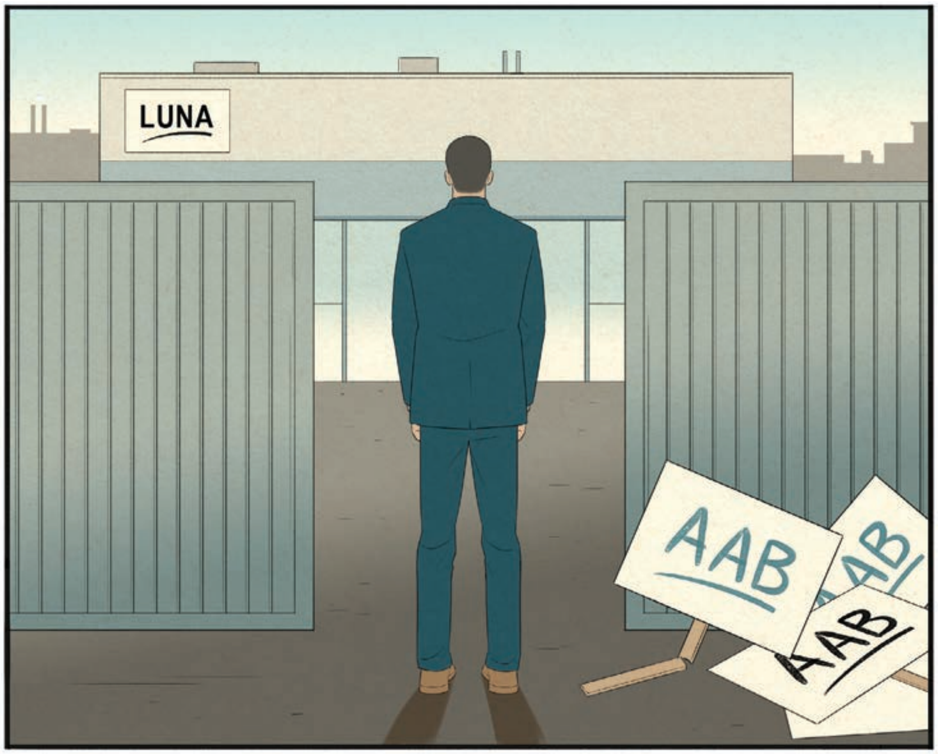
EXPERIENCE



Paulo leaned back on the couch and sighed. Before him now lay two paths, each of which presented its own set of risks and rewards. He could adopt a hard stance, pressuring Lucia with the very real possibility of closing the plant and using Takeshi's offer to turn it into a distribution center as leverage.

But because he was a consensus builder by nature, Paulo believed that true strength lay in unity, not division. He also realized that Luna's management had been at least partly at fault for the present rift—and wondered if capitulating to some of the union's demands might foster the partnership he yearned for. It would be a gamble, since compromising on near-term technological advancements could make Luna Brazil uncompetitive, hamstringing the plant and his own career. But might it also pave the way for a more resilient operation? *Kaizen* was about continuous improvement not just in processes and technology but also in people. Paulo's heart leaned toward reconciliation and growth, but his mind warred with the potential risks of capitulation. His next move was shaping up to be the most consequential one of his working life.

**JORGE TAMAYO** *is an assistant professor of business administration in the Strategy Unit at Harvard Business School.*




# Should Paulo offer further concessions or threaten to close the plant?

## The experts respond.

**LARRY COHEN** *is the former president of the labor union Communications Workers of America.*

### Paulo can pull off his plan to save the plant, but only with Lucia's partnership.

The cornerstone of any labor negotiation is job security. While pay and benefits are significant, they are secondary. Paulo's expansion plan promises not only employment stability but also employment growth. He must communicate that clearly, stressing that while he can't make guarantees because of his dependence on investment from headquarters, he has management's preliminary support.

Positive offers will be more effective than threats, but Paulo can subtly introduce the possibility that the plant could become a distribution center. Lucia, with her experience, will undoubtedly grasp the implications. When plants turn into parts centers, as many have in the United States, there are significant job losses.

However, he faces another challenge: his own bosses. In my experience agreements on paper mean little without deeper buy-in from management. Paulo should be more direct in making the case for expansion over conversion.

Effective communication with all stakeholders is vital. To get everyone on board, he and Lucia should jointly present the plan to both management and the union's rank and file. But Paulo's message should be personal. He should emphasize his local roots, his decision to return to his hometown after business school despite opportunities to work in larger markets, and his commitment to the community and the plant's future.

Lucia also can play a crucial role by using her political connections. With the Workers' Party—known for its interventionist policies—in power in Brazil, she can help ensure government support for Paulo's plan.

All the elements for a successful resolution are present, but overcoming mutual distrust will be the big challenge. If Paulo and Lucia can bridge that gap, leveraging their positions and influence judiciously, the future of the Campinas plant and its workers can be secured.

**AAKASH ARORA** *leads BCG's North America Automotive Practice.*

Paulo still has room to make concessions that will help win union support for his expansion plan and address the low employee morale plaguing the Luna plant.

Having walked the floors of many factories, I know that such facilities perform best when workers feel heard, recognized, and treated with fairness and equity. A good starting point for Paulo could be Luna's wage structure. He shouldn't rely on base wages alone or focus on overtime pay, because that incentivizes people to work longer hours rather than more efficiently. Instead he should consider variable pay measures such as profit sharing and bonuses, which reward performance and encourage innovation. He could also introduce an idea-management system that would allow employees to suggest improvements, awarding bonuses for those that are implemented.

That approach might deviate from the traditional "Luna way," which expects workers to have intrinsic motivation, and Paulo should expect resistance from Takeshi. But he must advocate for the autonomy necessary to address the unique dynamics of his workforce.

He can alleviate HQ's concerns by proposing a structured investment plan for the plant's expansion. The funding could be released in tranches, contingent upon the achievement of predefined productivity and quality targets. Those goals should be transparent and visibly communicated in the factory. I might even suggest a massive dashboard above the floor, letting workers know that if they meet the targets, they will create *x* number of jobs for the community.

Additionally, Paulo should prioritize reskilling initiatives. They will help lessen any underlying anxiety the workers have about being replaced or rendered obsolete by new technologies such as AI or electric cars. A robust training infrastructure will help get new hires up to speed quickly as well.

Paulo does not need to threaten Lucia with the potential closure of the plant. He can simply explain that it is currently uncompetitive in the larger Luna network and that he needs her help to fix the problem. After sharing his plans, including strategies for improving employee morale, he should encourage her to partner with him on their execution.

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**Reprint Case only** R2402X
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SYNTHESIS

# Does Capitalism Need Reform— or Revolution?

## New books come down on both sides of the debate.

by Scott LaPierre

**A RECENT HEADLINE** laments, "In a Warming World, Clean Energy Stocks Fall While Oil Prospers." The subhead explains, "The market is focused on making money now and isn't heeding urgent warnings about climate change." The message is clear: Despite the rise of stakeholder capitalism, corporations and investors are still motivated more by profits than by serving the public good.

That reminds me of a popular fable: A scorpion asks a frog for a ride on his back across a river. When the frog demurs, noting that he doesn't want to be stung to death, the scorpion argues that it's in his own best interest to keep his transport alive. So the frog agrees. But halfway across the water the scorpion stings him. As they're both drowning, the frog asks why he did it. "It's my nature," the scorpion replies.

Is capitalism the scorpion? Corporate executives and boards say they want to help employees, customers, communities, and the environment, but does the very nature of the system in which they operate ensure that they'll sting us all anyway? Put another way, can the same institutions that (along with many positive things) have exacerbated climate change and inequality be trusted to cure us of those ills? Can profitability coexist with environmental sustainability and economic equity? Several new books set out to answer those questions, and their answers vary widely, from a qualified "yes" to a hard "hell, no."

Early in ***The Alternative,*** the *New Yorker* writer Nick Romeo scrutinizes the software humming behind capitalism's facade: the academic field of economics. Until recently, most curricula espoused a value-free, self-regulating system of laws, wrapped in math and rationality and received as scientific fact, religious dogma, or both. Business leaders used the system as cover to unabashedly pursue financial gain. However, "[n]o economic law requires us to create cheap products or profitable



Illustration by MEL HAASCH

companies by paying workers so little that they cannot afford a decent life," Romeo writes. What the field needs, he argues, is to put "moral action" and "accountability" back at its core. The rest of the book is a world tour of companies successfully bucking economic orthodoxies, from De Aanzet, a Dutch grocer that prices goods higher to account for externalities, to the U.S.-based Well-Paid Maids, which gives employees a living wage. They prove, Romeo says, that capitalism can work for people, not just the other way around.

A similar reexamination of neoliberal economics animates ***The Road to Freedom,*** from the Nobel laureate Joseph Stiglitz. "Individuals differ markedly from the way they are depicted in standard economic theory," he writes. "They are less rational, but also less selfish." Calling economic inequality one of the greatest forms of "un-freedom," he argues that progressive capitalism could be a powerful mechanism for "balanc[ing] expansions of the freedom of some against the reductions in the freedom of others." Businesses would still play a central role, but so would collective action and robust government regulation, investment, and taxes. He adds an ominous note: "Fascist and authoritarian rulers have largely risen from a failure of government to do enough, not from government doing too much."

For leaders keen to practice better capitalism, ***Capitalism and Crises,*** by the Oxford business professor Colin Mayer, offers more theoretical scaffolding, beginning (like Stiglitz and Romeo) with a redefinition of profit to include broad progress and advancement as well as financial benefit, and of ownership to mean a responsibility rather than a right, implying that firms own both the good and the bad they create. He says that the purpose of a corporation is to produce solutions for society's problems; profiting from problems, especially those it has created, runs counter to that. He cites the contrast between relationship banking, in which banks profit by working with customers to grow healthy businesses, and transactional banking, in which margins come at customers' expense.

Once our values are lined up, what role should the business world play in saving the planet? Two books argue that capitalism's entrepreneurial spirit and profit motive are, in fact, critical. In ***Climate Capitalism,*** the Bloomberg reporter Akshat Rathi describes companies pushing key innovations with the help of governments. For example, through subsidies and regulations, China jump-started its electric car industry, spurring 300% growth in some years and making the country the world's largest EV market. This shows, Rathi writes, "that succeeding in scaling a green technology requires supportive government policies, substantial public and private investment, and empowering entrepreneurs."

Public-private cooperation is also featured in ***Venture Meets Mission,*** by Georgetown University's Arun Gupta, Gerard George, and Thomas J. Fewer. They argue that although the public sector has the power of the purse and lawmaking, it is too cautious and slow, so corporate resources must be tapped to ensure success. "Remove the preconceptions that working toward a higher purpose is decoupled from the ability to make money," the authors write. "Wouldn't those with an entrepreneurial mindset be most suited to address such challenges?"

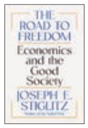
On the other side of this debate stands Kōhei Saitō, a philosopher and Marxist scholar who is not at all interested in reforming capitalism. In ***Slow Down,*** he calls for wholesale revolution, arguing that economic systems should prioritize "fulfill[ing] people's basic needs...over increasing the GDP." He dismisses the idea that profit can and should be a driving force, even poking holes in seemingly progressive plans such as the U.S. Green New Deal, which he sees as compromised. "Measures to stop climate change cannot double as ways to further economic growth," he argues. They "will only work if their only goal is stopping climate change." His proposals include designating essentials like energy and health care as public goods to be managed directly, publicly, and democratically through local organizations, because corporations (and the governments in their thrall) can't be trusted to fix our big problems.

Reading these books, I found no definitive answers for solving climate change or inequality, but I did come away with better questions. Is it the way we've grown that has gotten us into this mess, or does growth itself have limits in a world with finite resources? Will technological innovation be the driving force, or do we also need new ways of thinking about our consumption? Business is good at giving us more, but what if the solution involves less? In any case, I continue to hold out hope that the scorpion can change its nature.

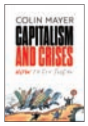
**HBR Reprint** R2402N

**SCOTT LAPIERRE** *is a senior editor at HBR.*

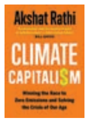
***The Alternative***
Nick Romeo
(PublicAffairs, 2024)



***The Road to Freedom***
Joseph E. Stiglitz
(W.W. Norton, 2024)



***Capitalism and Crises***
Colin Mayer
(Oxford University Press, 2024)



***Climate Capitalism***
Akshat Rathi
(Greystone Books, 2024)

***Venture Meets Mission***
Arun Gupta et al.
(Stanford Business Books, 2024)

***Slow Down***
Kōhei Saitō
(Astra House, 2024)

## Executive Summaries
## March–April 2024

SPOTLIGHT


# Why Consistent Growth Is So Challenging

Cracking the code on sustained profitable growth | page 37

Each article in this Spotlight is available as a single reprint. The complete Spotlight is also available as a package.
**HBR Reprint** R2402B


### How Fast Should Your Company *Really* Grow?

*Gary P. Pisano* | page 38

Growth—in revenues and profits—is the yardstick by which the competitive fitness and health of organizations is measured. Consistent profitable growth is thus a near universal goal for leaders—and an elusive one.

To achieve that goal, companies need a growth strategy that encompasses three related sets of decisions: how fast to grow, where to seek new sources of demand, and how to develop the financial, human, and organizational capabilities needed to grow. This article offers a framework for examining the critical interdependencies of those decisions in the context of a company's overall business strategy, its capabilities and culture, and external market dynamics. **HBR Reprint** S24021


### Create a System to Grow Consistently

*Paul Blase and Paul Leinwand*
page 46

Delivering consistent growth is one of the hardest things a company can do. A brilliant idea or product innovation can create a burst of episodic growth, but few companies demonstrate growth year in and year out, especially amid the disruptions and uncertain economy we've experienced during the 2020s. Some companies have managed to sustain consistent growth, however.

Research from PwC reveals that the highest-performing organizations invest in a *growth system*, an integrated collection of capabilities and assets that drives both short-term and long-term growth. The authors provide a framework for building a growth system offering case examples highlighting Toast, IKEA, Vertex, Adobe, and Roblox. **HBR Reprint** S24022


### How to Succeed in an Era of Volatility

*Dunigan O'Keeffe, Karen Harris, and Austin Kimson*
page 53

Over the past 30 years we've lived through a remarkable era of macrostability, characterized by largely peaceful geopolitics, generally falling interest rates, expanding credit markets, and moderate inflation. The landscape has shifted, and we've now entered an era of volatility in which new rules apply and the intuitions that leaders have developed over the past few decades cease to be useful—and the shape of opportunity and risk are entirely different.

This environment requires an approach to strategy that integrates bold investments in three capabilities: prediction, adaptability, and resilience. This article offers guidance on determining how best to allocate your resources across the three capabilities.
**HBR Reprint** S24023

HOW WE DID IT


## The Chair of Honeywell on Bringing an Industrial Business into the Digital Age

*Darius Adamczyk* | page 31

The author, Honeywell's CEO until June 2023, writes: "There's zero chance that we would have made it through Covid, inflation, the upswing in geopolitical risk—all the challenges we faced over the past several years—had we not developed a transparent and coherent digital strategy."

In this article he describes the company's multifaceted transformation from a diversified industrial conglomerate into an integrated company. Internally, the goal was to improve productivity, transparency, and agility with centralized data to guide business decisions. Externally, it was to harness all the information generated by systems Honeywell sold in order to offer clients a whole new kind of value: a means to track emissions, save energy, improve safety, and more.

First the company had to simplify and reorganize its infrastructure, going from 150-plus enterprise resource planning systems (ERPs) to 10, from 1,700 websites to fewer than 100, and from 2,700 applications to fewer than 1,000. Next it had to define master data for products, employees, customers, and many other things. Then it developed a strategy for putting all that data to work. By running the monthly meetings and the operating reviews himself, Adamczyk sent a message to everyone: "I care about this transformation personally, and we're committed to this path." **HBR Reprint** R2402A

MANAGING YOURSELF

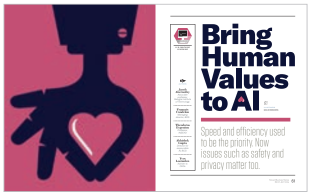

## Negotiate Like a Pro

*Scott Walker* | page 139

During his former career as a kidnapping and extortion negotiator, the author handled sensitive cases all over the world. Through his experiences, observations, and conversations with other experts in the field, he developed a deep understanding of what works and what doesn't in high-stakes negotiations. Now he advises executives and corporations about what he calls the *level-five mindset,* which involves deep listening to better understand and interpret a counterpart's self-perception and perspective. He offers eight tools to both ensure and demonstrate that mindset: minimal encouragers, open questions, reflecting back, emotional labeling, paraphrasing, "I" statements, effective pauses, and summarizing. Using them, he writes, will "boost your capacity for empathy, your ability to find common ground, and your chances of gaining your counterpart's cooperation." **HBR Reprint** R2402L

# Features

AI & MACHINE LEARNING




## Bring Human Values to AI

*Jacob Abernethy et al.*
page 60

When it launched GPT-4, in March 2023, OpenAI touted its superiority to its already impressive predecessor, saying the new version was better in terms of accuracy, reasoning ability, and test scores—all of which are AI-performance metrics that have been used for some time. However, most striking was OpenAI's characterization of GPT-4 as "more aligned"—perhaps the first time that an AI product or service has been marketed in terms of its alignment with human values.

In this article a team of five experts offer a framework for thinking through the development challenges of creating AI-enabled products and services that are safe to use and robustly aligned with generally accepted and company-specific values. The challenges fall into five categories, corresponding to the key stages in a typical innovation process from design to development, deployment, and usage monitoring. For each set of challenges, the authors present an overview of the frameworks, practices, and tools that executives can leverage to face those challenges.

**HBR Reprint** R2402C

CAREER TRANSITIONS


## Redesigning Retirement

*Ken Dychtwald, Robert Morison, and Katy Terveer*
page 70

Businesses today face serious talent gaps. The share of companies reporting staffing shortages is at an all-time high: 77%. Last fall the United States had 9.5 million unfilled jobs but only 6.5 million unemployed workers. Many open positions demand sophisticated know-how that cannot be supplied by AI or by training new hires.

Every day 10,000 Americans reach the traditional retirement age of 65, which exacerbates the problem. Critical skills, experience, and connections can walk out the door with each retirement. The good news is that many older employees want to keep working; in fact, nearly 60% say they're receptive to the idea of working during retirement.

It's time for companies to stop overlooking this large, valuable labor pool. Employers need to shed their misconceptions about older workers and take measures to make the most of their experience, creating phased retirement programs, offering refresher courses, and recruiting through retiree networks, among other strategies. Older employees' knowledge can be leveraged through coaching roles, on multigenerational teams, and in institutional systems. But companies will have to work to engage their seasoned staffers, offering them flexibility, the right benefits, and opportunities for connection. **HBR Reprint** R2402D

ENVIRONMENTAL SUSTAINABILITY


## How to Market Sustainable Products

*Frédéric Dalsace and Goutam Challagalla* | page 80

Many companies overestimate customers' appetite for sustainable products, flooding the market with offerings that don't sell. The reality is, social and environmental benefits have less impact on purchasing decisions than basic product attributes do. Consumers buy products to get specific jobs done, and only *after* they find something that will do that will they look for a product that provides some social or environmental advantage.

Of course, that's only if they value sustainability. Not everyone does, and marketers need to recognize that. Some customers *(greens)* place a premium on it, some *(blues)* value it only moderately, and some *(grays)* don't care about it and view it skeptically. The three segments cannot all be approached in the same way. How sustainable product benefits interact with traditional benefits is also critical: They can have no impact on a product's performance *(independence)*, diminish it *(dissonance)*, or enhance it *(resonance)*. Marketers need to follow different playbooks for independent, dissonant, and resonant products, tailoring their approaches to green, blue, and gray customers with each.

**HBR Reprint** R2402E

INNOVATION


## Nurturing Innovation

*Anne-Laure Fayard et al.*
page 88

Despite a multitude of initiatives in cross-sector collaboration and open innovation, businesses still struggle to support the development of game-changing ideas. The authors argue that the solution to this problem starts by recognizing an important truth: Innovation is about more than an idea—it is a long, collaborative journey. Innovation is more likely to succeed when it is a curated process in which an intermediary takes responsibility for sparking and sustaining collaboration among the people involved.

In this article, the authors demonstrate how intermediaries can support collaboration throughout the entire innovation journey. First, they provide opportunities for innovators to make connections. They don't simply bring people together; they carefully select participants and curate the experience to generate the best results. Second, they help innovators develop relationships, using structured follow-ups and offering holistic mentoring. And third, they help entrepreneurs sustain their relationships and manage the team over time as the collaborations evolve and team members change.

**HBR Reprint** R2402F

AI & MACHINE LEARNING


# Heavy Machinery Meets AI

*Vijay Govindarajan and Venkat Venkatraman* | page 98

Until recently most incumbent industrial companies didn't use highly advanced software in their products. But now the sector's leaders have begun applying generative AI and machine learning to all kinds of data—including text, 3D images, video, and sound—to create complex, innovative designs and solve customer problems with unprecedented speed.

Success involves much more than installing computers in products, however. It requires *fusion strategies,* which join what manufacturers do best—creating physical products—with what digital firms do best: mining giant data sets for critical insights. There are four kinds of fusion strategies: *Fusion products,* like smart glass, are designed from scratch to collect and leverage information on product use in real time. *Fusion services,* like Rolls-Royce's service for increasing the fuel efficiency of aircraft, deliver immediate customized recommendations from AI. *Fusion systems,* like Honeywell's for building management, integrate machines from multiple suppliers in ways that enhance them all. And *fusion solutions,* such as Deere's for increasing yields for farmers, combine products, services, and systems with partner companies' innovations in ways that greatly improve customers' performance.

**HBR Reprint** R2402G

MANAGEMENT COMMUNICATION


# How Companies Should Weigh in on a Controversy

*David M. Bersoff, Sandra J. Sucher, and Peter Tufano*
page 108

Executives need guidance about managing their organizations' engagement with societal issues—including hot-button topics such as gender, climate, and racial discrimination. Success in this realm does not mean avoiding public controversy or achieving unanimous support among key stakeholders, the authors write. Rather, it results from adhering to certain processes and strategies, which they have derived from recent global survey research along with examples from managerial best practice.

They offer an approach that is anchored in data but sensitive to values and context. It can be helpful in figuring out which issues to address and how; in ameliorating disappointment among stakeholders; and in managing any potential blowback.

Data can tell you what your various stakeholders care about, they write, but judgment is necessary to act in careful consideration of conflicting preferences while being consistent with your company's values.

**HBR Reprint** R2402H

HEALTH CARE & TREATMENT


# Retailers and Health Systems Can Improve Care Together

*Robert S. Huckman, Vivian S. Lee, and Bradley R. Staats*
page 120

Health systems are struggling to address the many shortcomings of health care delivery: rapidly growing costs, inconsistent quality, and inadequate and unequal access to primary and other types of care. However, if retailers and health systems were to form strong partnerships, they could play a major role in addressing these megachallenges.

While some partnerships do exist, they are rare and have only scratched the surface of their potential. Rather than focusing on the direct-to-consumer model that retailers have largely employed, the partnerships should offer much broader care.

Drawing on real-world examples, the authors outline four key actions that retailers and health systems should take: (1) They must move beyond convenience to offer comprehensive care. (2) They should move care from clinics into the home. (3) They should leverage data to improve clinical care and the customer experience. And (4) they should change how—and by whom—health care work is done. Implementing these four actions would generate improvements that would benefit not just patients but also the organizations that pay for their health care.

**HBR Reprint** R2402J

SUPPLY CHAIN MANAGEMENT


# How Machine Learning Will Transform Supply Chain Management

*Narendra Agrawal et al.*
page 128

Businesses need better planning to make their supply chains more agile and resilient. After explaining the shortcomings of traditional planning systems, the authors describe their new approach, optimal machine learning (OML), which has proved effective in a range of industries. A central feature is its decision-support engine that can process a vast amount of historical and current supply-and-demand data, take into account a company's priorities, and rapidly produce recommendations for ideal production quantities, shipping arrangements, and so on. The authors explain the underpinnings of OML and provide concrete examples of how two large companies implemented it and improved their supply chains' performance.

**HBR Reprint** R2402K

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Printed in the U.S.A. *Harvard Business Review* (ISSN 0017-8012; USPS 0236-520), published every other month for professional managers, is an education program of Harvard Business School, Harvard University; Srikant Datar, dean.

Published by Harvard Business School Publishing Corporation, 60 Harvard Way, Boston, MA 02163.

# Life's Work

> "Talent is more than a voice. It's also being able to digest information quickly and having the instincts that allow you to inhabit the body of another person onstage."

Andrew Eccles/Decca

# Renée Fleming

*Shy as a child, Fleming thought she'd grow up to be a music teacher like her parents. Instead she became the reigning American soprano of her era, performing at opera houses around the world and winning five Grammys. She has excelled in other arenas, too: indie recordings, Broadway roles, adviser and artistic director positions at performing arts companies, and a World Health Organization ambassadorship. Her most recent project is curating* Music and Mind, *a book exploring the link between the arts and well-being.* **Interview by Alison Beard**

**HBR: How does a shy girl become a famous performer?**

**FLEMING:** I started emulating singer friends who were different: not as self-critical, with fewer doubts. I felt that I had to be perfect to succeed, but they didn't; coming out of every audition, they assumed they'd done fabulously well. I thought, *Let me learn from that.* I often tell young singers, "If you are insecure, just act like someone else. Take on the persona of a performer who is extremely confident." It helped me.

**Describe your training.**

I've always had the ability to take what works for me and leave the rest, and that's extremely helpful. People can teach singing at our level in many ways. They encompass three centuries of different styles of music from different countries that all have different rules around them. It's a big learning curve. Some people flounder because they go from teacher to teacher without absorbing the lessons. You also have to be able to say, "I work better with someone who uses imagery" or "I prefer to talk about physiology." That discernment—the ability to ask for and take what you can use—is a certain type of intelligence.

**You've had bouts of stage fright. What brought it on and how did you overcome it?**

The worst period was when my career was at a pinnacle, so it's amazing that I got through without blowing it up. A couple of things were at the root of the stage fright. One was a deep-seated discomfort with success. Psychologists call it *success conflict,* and a lot of people might not know about it. But we can all point to celebrities or politicians who have sabotaged their careers with drug and alcohol abuse or other poor choices. Part of the problem is that you're being taken far from your roots and comfort zone, maybe to a level of success way beyond your friends and family, and that's uncomfortable. I was also taking on too much new work. I had two small children, and my marriage was coming to an end. So stage fright was my mind's way of saying, *Step back.* It took a lot of self-reflection, therapy, and support to get through that time. I don't have stage fright anymore. But it's always in the back of my mind as a possibility. So I think about being prepared, knowing what triggers anxiety, and not overextending myself.

**How are you thinking about your career now?**

I'm in a bit of trouble because I didn't think I would be singing this much at this point. I'd been strategic about creating all this other work that I'd want to do as I slowed down. So now I'm juggling five jobs—Los Angeles Opera, Kennedy Center, SongStudio at Carnegie Hall, Aspen Music Festival, *Music and Mind*—and performing. But my mantra is "Keep your eye on the prize." I am very practical, pragmatic, goal-oriented. So when I get tired or frustrated, I just ask, *In all these things, what am I trying to achieve?* Then I tell myself, *You can do it. Just keep juggling,* because I truly love all my projects, and I don't want to give anything up.

**HBR Reprint** R2402P

FOR MORE FROM RENÉE FLEMING, GO TO **HBR.ORG**.