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A Debt of Gratitude

AFTER MONTHS OF CAUTION and isolation, most of us in the United States are heading toward normal—complete with ball games, hugs, and mask-less visits to the office. We owe this shift largely to the creation and rollout of Covid-19 vaccines. Few breakthroughs have affected life as dramatically as what my British colleagues call “the jab.”

Although HBR often publishes articles about how companies can get better at innovation, I knew very little about Moderna before its vaccine began racing through clinical trials in 2020. But as Noubar Afeyan (Moderna’s chairman) and Gary Pisano (a professor at Harvard Business School) make clear in their article in this issue, “What Evolution Can Teach Us About Innovation,” the company spent a decade quietly laying the groundwork for its breakthrough.

“Far from a one-and-done stroke of luck,” they write, “the vaccine was a product of a repeatable process that has been used countless times by the company from which Moderna emerged: Flagship Pioneering, a venture-creation firm based in Cambridge, Massachusetts, whose mission is to conceive, make, and commercialize breakthrough innovations in previously unexplored domains of the life sciences.”

The global pandemic of 2020–2021 will be studied for decades to come—and with more than 4 million deaths worldwide as I write this, leaders everywhere can learn from what has gone wrong. For now, though, let’s celebrate the lessons of Moderna and the other vaccine makers—including Pfizer, BioNTech, Johnson & Johnson, and AstraZeneca—which together have helped reduce the risk of infection for 2.9 billion people and counting.

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Noubar Afeyan, who founded his first company when he was 25, initially took the path most entrepreneurs follow: Conceive an innovative idea, start a company, raise venture capital, and then either grow or, all too often, fail. Over time, he began to question the notion that the high failure rate for new ventures was inevitable, and founded Flagship Pioneering, which developed a repeatable process for achieving breakthrough innovations at scale. In this article, Afeyan and coauthor Gary Pisano describe the process, focusing on one of Flagship's many successes: Moderna, maker of a Covid-19 vaccine.

62 What Evolution Can Teach Us About Innovation



Growing up, **Dorie Clark** was never a fan of patience. (She left home at age 14 to attend college.) But she has made her peace with it, as she came to realize through her research on top performers (including for her latest book, *The Long Game*) that the best executives and entrepreneurs are practitioners of "strategic patience," which she describes in this article. "Instead of passively wishing and hoping, the best leaders proactively test hypotheses and persevere—which leads to a competitive advantage over time," she says.

143 Feeling Stuck or Stymied?



In 2017 **Paul Polman** found himself at the center of a tussle over the future of capitalism. As CEO of the consumer giant Unilever, he faced an aggressive takeover bid from a private-equity-run firm that criticized his vision of a company that put purpose and enriching lives at the core of the business. The bid was rebuffed, and Unilever continued to outperform the market and lead the industry in sustainability. In his article, with coauthor Andrew Winston, Polman pushes businesses to go even further, by improving everything they touch and thriving as a result—what the duo term a net-positive company.

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Katherine Xin left China in the 1980s to study English literature in the U.S. Accepted into a PhD program in education, she planned to return to China and become a teacher. But she switched to an MBA program (without telling her parents) and earned a doctorate in organizational behavior. Since then Xin has worked as a researcher, teacher, and editor (including 10 years as editor of HBR's Chinese language edition). Her interest in digital retailing, the focus of this article coauthored by Mark Greeven and George Yip, stems from her observation of how technology has transformed consumer behavior in China.

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Tsilli Pines is a graphic designer based in Portland, Oregon. To create the images that appear with this article, Pines used vintage paper, rice paper, cotton thread, and red and black pigment—the colors of accounting. "I'm interested in the power numbers have in our lives," Pines says. These images are about "the extent to which I think about finances and use the historically feminine crafts of sewing, collage, and rubber stamping to explore the traditionally masculine realm of business." Pines is the VP of creative at Instrument, a digital agency in Portland.

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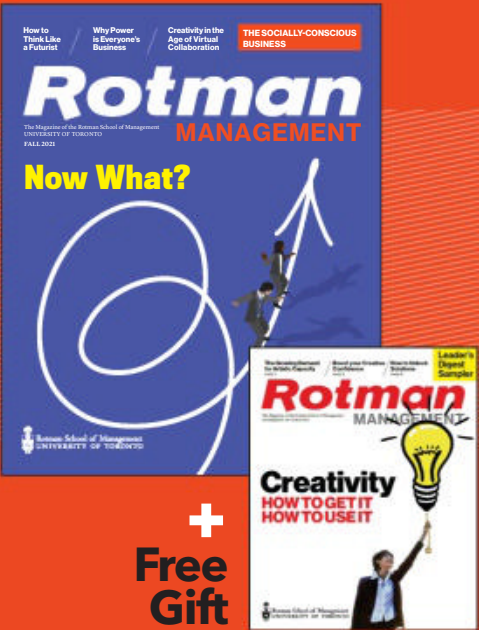
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SOCIAL

MEDIA SITES such as Facebook, TikTok, and Instagram have given many organizations a new hiring tool. According to a 2018 CareerBuilder survey, 70% of employers check out applicants' profiles as part of their screening process, and 54% have rejected applicants because of what they found. Social media sites offer a free, easily accessed portrait of what a candidate is really like, yielding a clearer idea of whether that person will succeed on the job—or so the theory goes.

However, new research suggests that hiring officials who take this approach



IdeaWatch

should use caution: Much of what they dig up is information they are ethically discouraged or legally prohibited from taking into account when evaluating candidates—and little of it is predictive of performance.

In the first of three studies, the researchers examined the Facebook pages of 266 U.S. job seekers to see what they revealed. Some of the information that job seekers had posted—such as education, work experience, and extracurricular activities—covered areas that organizations routinely and legitimately assess during the hiring process. But a significant share of profiles contained details that companies may be legally prohibited from considering, including gender, race, and ethnicity (evident in 100% of profiles), disabilities (7%), pregnancy status (3%), sexual orientation (59%), political views (21%), and religious affiliation (41%). Many of the job seekers' profiles also included information of potential concern to prospective employers: 51% of them contained profanity, 11% gave indications of gambling, 26% showed or referenced alcohol consumption, and 7% referenced drug use.

“You can see why many recruiters love social media—it allows them to discover all the information they aren’t allowed to ask about during an interview,” says Chad Van Iddekinge, a professor at the University of Iowa and one of the study’s researchers. “But that’s a problem, because one of the hallmarks of legal hiring practices is that they focus on behaviors within the work context. There should be a clear distinction between what people do during work and what they do outside of it.”



In the second study, the researchers explored whether such information affects recruiters' evaluations. They asked 39 recruiters to review the Facebook profiles of 140 job seekers (obtained from a previous larger study) and rate each candidate's hireability. The researchers then mapped the recruiters' ratings against the content in each profile. Although the recruiters clearly took heed of legitimate criteria, such as education and writing ability, they were also swayed by factors that are supposedly off-limits, such as relationship status (married and engaged candidates got higher marks, on average, than

their single counterparts), age (older individuals were rated more highly), gender (women had an advantage), and religion (candidates who indicated their beliefs got lower ratings). Factors such as profanity, alcohol or drug use, violence, and sexual behavior lowered ratings; extracurricular activities had no effect on scores.

In their final study, the researchers probed the end goal of social-media mining: hiring better people. They obtained supervisors' ratings for 81 of the job seekers in the second study (chosen randomly) after six to 12 months of employment and surveyed

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those employees about whether they intended to stay in their jobs. They then asked a new set of recruiters to assess the Facebook profiles, dividing the recruiters into two groups. One group proceeded without any special instructions. The other was trained in best practices for evaluating social media information: Its members were told to focus on work-related information and avoid job-irrelevant details, use the same criteria to evaluate all individuals, take notes on their observations, and be mindful of decision-making errors and biases, such as a tendency to favor candidates whose interests or characteristics aligned with their own. Neither group's assessments of the candidates accurately predicted job performance or turnover intentions, indicating that even with careful instruction, hiring officials stand to gain little from probing applicants' online activity. (LinkedIn, which was outside the scope of the research, seems an obvious exception.)

The participants in the studies willingly granted the researchers permission to view their Facebook pages—but in many cases hiring managers don't need to ask, because profiles are often public. What's more, previous research has found that a third of U.S. recruiters request access to candidates' Facebook pages, and the vast majority of job seekers comply. That's beginning to change: More than 20 U.S. states now bar employers from asking applicants to pull up their social media pages during an interview or to share their usernames and passwords. EU regulators go a step further, forbidding hiring managers from viewing a candidate's social media unless that person explicitly consents.

What about using social media solely as a negative screen—that is, to identify any warning signs, such as overt racism or misogyny? “We didn't study that,” says Liwen Zhang, a lecturer at the University of New South Wales and the research paper's lead author. “But our research shows that a recruiter will be influenced by everything she sees on a social media site, so if companies want to look for red flags, they should have someone other than the hiring manager do so.”

The researchers suggest that job seekers “clean up” their social media pages, including problematic content that others may have posted, and tighten their privacy settings. Companies and researchers should also explore alternative ways of using social media in the hiring process, they say. For instance, recent studies have found that machine-learning applications might be able to determine certain personality traits from social media profiles—information that could prove useful in managing people once they have come on board.

In the meantime, the researchers recommend that hiring managers resist the temptation to pore over candidates' social media pages. “We aren't saying that the information there is useless,” Van Iddekinge says, “but we don't yet have the tools to find the signal in all the noise.”  **HBR Reprint** F2105A



ABOUT THE RESEARCH “What's on Job Seekers' Social Media Sites? A Content Analysis and Effects of Structure on Recruiter Judgments and Predictive Validity,” by Liwen Zhang et al. (Journal of Applied Psychology, 2020)

IN PRACTICE

“If You Let Hiring Managers Screen Social Media Profiles, It Will Result in Bias”

As CEO of the recruiting firm ECA Partners, **Atta Tarki** often cautions clients not to screen job candidates' social media accounts as part of the hiring process. He recently spoke with HBR about why he's wary of digital sleuthing. Edited excerpts follow.

Why shouldn't firms take advantage of candidates' publicly available social media profiles?

It's like going on a fad diet to achieve better health—it's a shortcut that doesn't work. We advise our clients to stick to evidence-based hiring. We have not seen any high-quality research showing that social media information is particularly predictive of job performance, unless the job is directly related to social media. Some studies show a small predictive power when running regressions over a very large set

of data, but in practice that's rarely helpful. Suppose a study of 3,000 people concluded that individuals who post a lot of selfies on social media are 3% more extroverted in the workplace. If you are hiring thousands of salespeople for standard roles in which extroversion is important, screening for that trait might be useful. But if you are hiring for one senior role or even a dozen, bringing social media into your assessment is likely to do more harm than good. That's in part because of what academics call the dilution effect: the tendency of available but non-diagnostic information to weaken the impact of quality information.

Can't companies use social media to screen for certain traits that predict performance?

I'm doubtful. Anyway the larger problem is that most companies do not clearly measure and consider the performance of their hires against hiring hypotheses. For instance, you might have a theory that extroverts are better salespeople, but do you know whether that's true at your company? In fact, research shows that introverts outperform extroverts in many consultative sales roles.

Do you agree with the research findings that using social media when evaluating candidates can result in discrimination?

I do. Good intentions are not enough to avoid bias. People tend to be attracted to those who are like them. If you let hiring managers screen social media profiles, it will absolutely result in bias. For example, if a hiring manager who's a vegan finds photos of hunting on a candidate's profile, of course

that will influence his emotional connection to the candidate.

Also think about what you're telling candidates about your company's values if you take shortcuts that some people might find creepy. Why judge candidates on their social taste? Shouldn't they be tested on their ability to do the job?

So is social media useful to hiring managers at all?

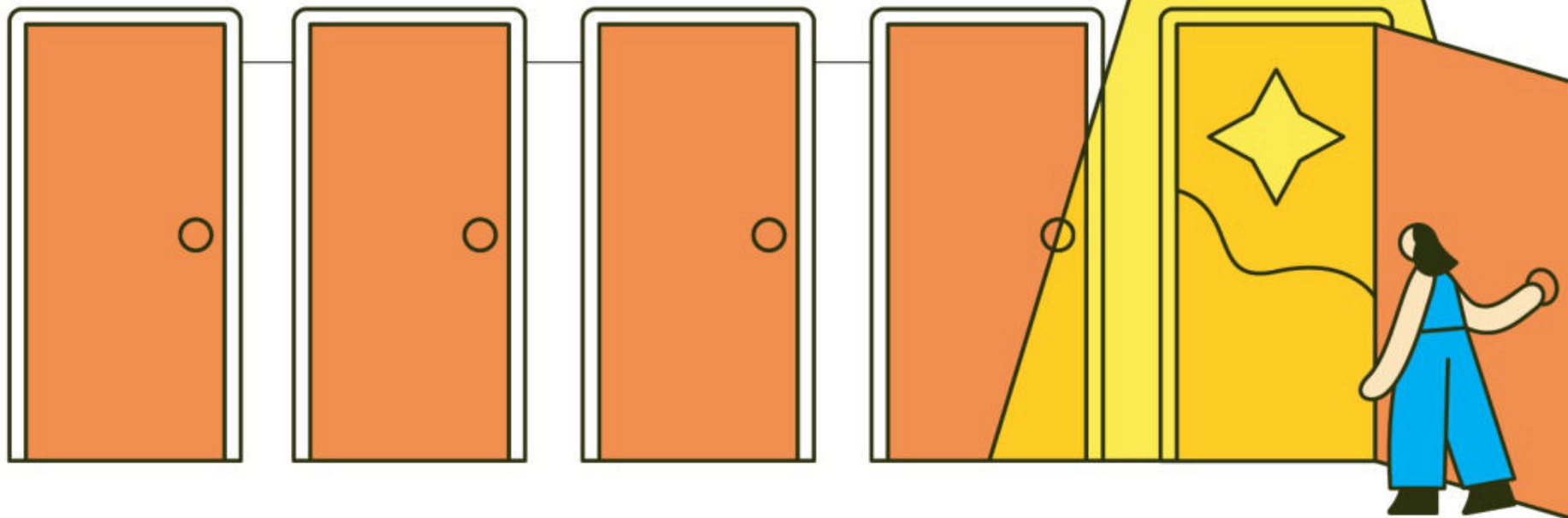
The only solid argument I've heard for using social media in hiring is the rhetorical question: "Wouldn't you feel stupid if you hired someone and then learned through social media that they had attended a KKK rally?" Yes, I would, and it can be helpful to screen for such

things. But to minimize the chance of bias, we are disciplined about having someone other than the hiring manager do a social media screen and report back only on unequivocal red flags. And we do such screening late in the hiring process, as part of the background check once a candidate has been selected. ☹





IdeaWatch



INEQUALITY

Nudging for Good

Choice architecture—determining the context in which people make decisions—is a ubiquitous part of consumer life. Products are presented in a certain order, for example, and that affects what consumers buy. A large body of research has shown that simple tweaks to choice architecture—often called nudges—can lead people toward decisions that are in their own self-interest. A series of new studies finds that they can also be an effective tool for reducing socioeconomic disparities.

In the first study, 825 participants of varying socioeconomic status were presented with five financial decisions, including whether to make the full or the minimum payment on a credit card and whether to contribute to a retirement fund. They were randomly assigned to have either the best or the worst option presented as the default. Across all decisions, participants of low-socioeconomic status were more likely than others to accept the default. They benefited more than twice as much as their higher-status

counterparts when it was the best option—and were harmed more when it was not. Later studies showed that low-status participants were more responsive to other types of nudges as well (involving the number of choices and the order in which they were presented) and in contexts ranging from retail purchases to Covid-related health decisions.

Low-socioeconomic status is often accompanied by lower levels of numeracy and financial literacy, the researchers explain; and because consumers with fewer skills in those areas feel more uncertainty and anxiety about related decisions, they are more likely than others to accept the default or to choose the first option that is put before them. “Good defaults were an equalizer that helped to reduce the differences in decision quality between consumers with low versus high socioeconomic status, numeracy, and financial literacy,” the researchers write. To create a more level playing field, they say, organizations could use “smart defaults,” which present different options to different groups of people. When only a single nudge is available, managers could focus on the potential benefits

for individuals of low-socioeconomic status when choosing the default.



ABOUT THE RESEARCH “Do Nudges Reduce Disparities? Choice Architecture Compensates for Low Consumer Knowledge,” by Kellen Mrkva et al. (Journal of Marketing, 2021)

COMMUNICATION

Those Typos in Your Emails Matter More Than You May Think

Email and other text-based communications are generally seen as relatively deliberate media, given that senders can review their messages and edit out anything they don’t intend to convey. New research finds a more complicated picture—one in which simple typing errors serve as powerful cues of emotion.

Across six studies, participants who read emails containing a few mistyped words interpreted those messages as being more emotional than were error-free but otherwise identical emails. In one study, for example, 598 participants read a message from a manager



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THE CLOSER, THE BETTER

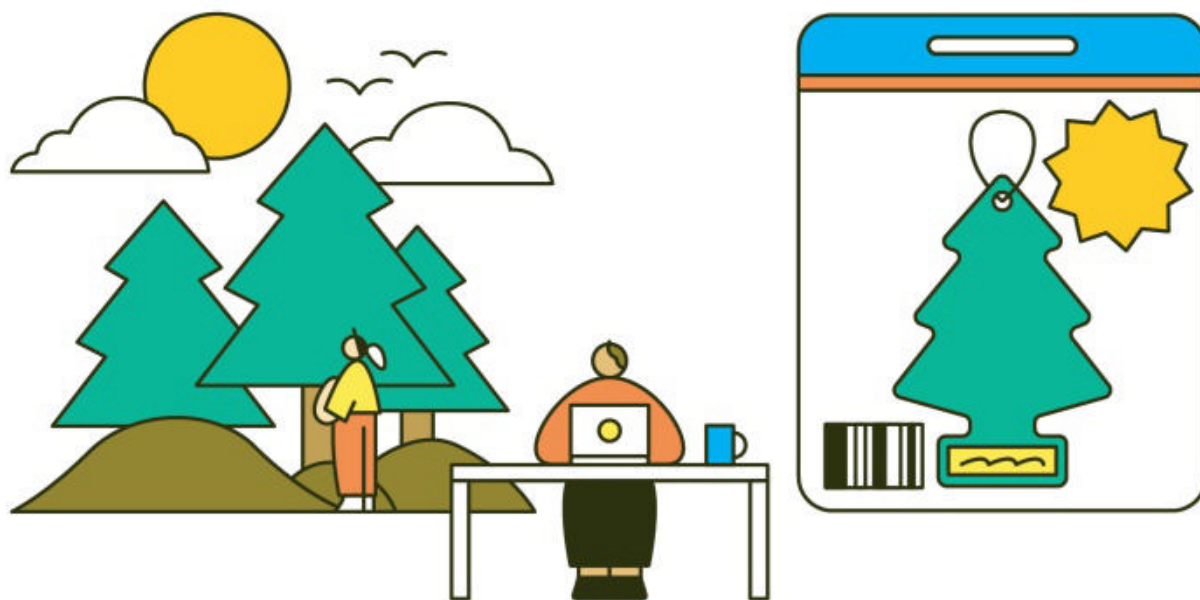
A one-standard-deviation increase in uncertainty about the outcome of a professional sports game (as assessed by the odds offered in legal betting markets) causes stadium attendance to jump by an average of 11%.

“Consuming Contests: Outcome Uncertainty and Spectator Demand for Contest-Based Entertainment,” by Patrick J. Ferguson and Karim. R. Lakhani

dressing down an employee who had failed to submit a report on time. The version read by one group of participants contained three typos, while the version read by a second group had none. Those who read the email with errors rated the manager as significantly angrier than did those who read the error-free message. A subsequent experiment showed that the pattern held when the email concerned a happy event: In that instance, typos increased perceptions of the message writer’s joy. When people observe something unexpected, such as a typo, they seek to find a reason for it, the researchers explain, and we are culturally conditioned to think that intense feelings often lead to cognitive processing mistakes. Hence, “communication errors act as an amplifier of the perceived intensity of an otherwise expressed emotion,” they say. A silver lining: When encountering typos in an emotionally laden message, readers judge the writer less harshly than when the message is emotionally neutral, attributing the errors to an excess of feeling rather than a lack of intelligence.

People who are aware of the emotional signals that errors can send may be better able to communicate effectively, the researchers conclude. “For example, if a manager wanted to communicate what she considered an appropriate amount of anger over poor results, she may be more apt to triple check her email” for mistakes.

ABOUT THE RESEARCH “Beyond the Emoticon: Are There Unintentional Cues of Emotion in Email?” by Hayley Blunden and Andrew Brodsky (Personality and Social Psychology Bulletin, 2021)



WELL-BEING

A Simple Reframing Boosts Employee Happiness

It’s practically a mantra for consumers: To be happier, buy experiences, not goods. A new study investigates whether a similar psychology applies to employees who provide experiential offerings.

The researchers surveyed more than 200 people in a variety of industries about whether they viewed their work as providing material or experiential goods, how important the offerings were to them, the degree to which their work affected others, and various measures of job meaningfulness and happiness. Those who saw their jobs as primarily providing experiences reported greater involvement of the self and a stronger perception of helping others. Those factors led them to find greater meaning in their work, which increased their job-related happiness. In a subsequent experiment, the researchers encouraged some salespeople to view their work as

providing experiences and others to view it as providing a product and then asked similar questions. Members of the first group reported significantly higher levels of happiness, on average.

The final experiment showed that when a purchase turned out poorly for the customer, employees who saw themselves as having provided an experience reported greater job-related happiness than the others and thought the effect on the customer was less dire, suggesting that viewing one’s job as experiential provides a buffer against negative work experiences. “Helping employees see the experiential aspects of the goods that they provide is an effective way to foster their psychological well-being,” the researchers write.

ABOUT THE RESEARCH “A New Look at Employee Happiness: How Employees’ Perceptions of a Job as Offering Experiences Versus Objects to Customers Influence Job-Related Happiness,” by Wilson Bastos and Sigal G. Barsade (Organizational Behavior and Human Decision Processes, 2020)

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INNOVATION

Protecting Your Patent Can Be a Learning Experience—for Your Adversary

When one firm believes that another is making unauthorized use of its intellectual property, it may seek redress by filing suit. However, a new study shows that patent litigation can be a double-edged sword, further exposing the very knowledge it was designed to protect.

The researchers analyzed more than 3,000 patent-infringement cases filed from 1998 to 2015 by pharmaceutical companies operating in the United States. They obtained detailed information on the firms, including financial and patent data and Food and Drug Administration approvals, and compared it with information on firms not involved in litigation. This revealed that the defendants in patent-infringement suits were, on average, 18% more likely to subsequently create a novel drug than firms that weren't sued, and they did so in half the time normally needed. When the patent at issue drew on relatively new or heterogenous knowledge

or was broad in scope, the accused firm's innovation bump was even greater.

To pursue a patent-infringement claim, the researchers explain, a firm often must disclose—to the defendant as well as the court—proprietary knowledge beyond what is in the patent itself. In the discovery stage of the trial, plaintiffs commonly have to share research notebooks and information about company procedures, successful and failed experiments, labs and other physical equipment, and knowledge held by employees and expert witnesses. To prove that their patent is nonobvious and unique, they might have to explain new scientific aspects of their creation and provide a detailed road map of the process by which it was developed. And throughout, they might inadvertently illuminate best practices that could help the accused firm avoid fruitless investigations and preserve its resources for more-profitable endeavors.

"In this way, new information to which it otherwise would not have had access can flow to the accused firm," the researchers write. As a result, they add, "the defendant firm...can avoid the mistakes made by the patent-holding firm while learning from its successes." And because a company generally sues

only when its most valuable intellectual property is at stake, such unintended spillovers can have serious implications for its competitive position.

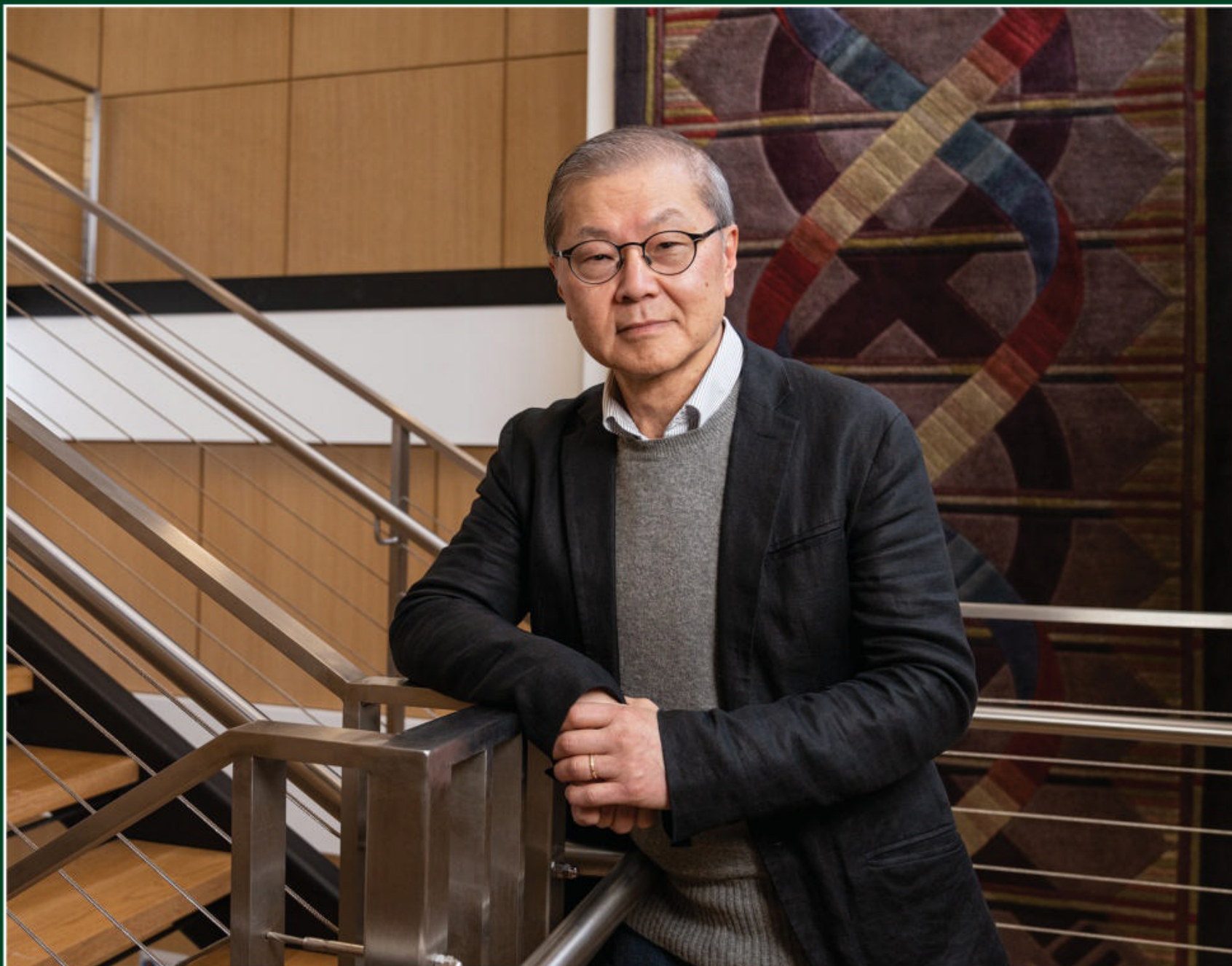


ABOUT THE RESEARCH "A Trojan Horse Inside the Gates? Knowledge Spillovers During Patent Litigation," by Kiran S. Awate and Mona Makhija (Academy of Management Journal, forthcoming)

BRAND NAMES

The Feminine Advantage

Marketing managers spend considerable time and money deciding what to call new products, with boutique naming fees running as high as \$10,000 per letter. A new study pinpoints a basic attribute they should consider: whether a name is linguistically masculine or feminine. Analyzing 20 years' worth of entries on the Interbrand Global Top Brands list, the researchers found that brands with feminine-sounding names—generally, relatively long words ending in a vowel and with an unstressed first syllable—were more likely than others to make the cut and to earn a spot high up on the list.



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COULD TELECOMMUTING BOOST INNOVATION?

Each 10-kilometer increase in an inventor's commute is associated with a 5% decrease in patents filed and a 7% decrease in patent quality—and the higher-performing the inventor, the steeper the declines. “Commuting and Innovation: Are Closer Inventors More Productive?” by Hongyu Xiao, Andy Wu, and Jaeho Kim

In five subsequent experiments involving both well-known and fictitious brands, the researchers confirmed the superior performance of feminine names and explored the reasons for it. Across products ranging from sneakers to hand sanitizer to YouTube channels, participants favored those with a feminine-sounding name (Nimilia, say) over more-masculine ones (Nimeld). They saw the feminine names as conveying warmth, which inspired more-positive attitudes toward the brand and made them more inclined to choose it.

There were exceptions, of course. When a product was aimed at a male audience, the researchers found, masculine and feminine brand names were equally well-liked. And although participants displayed a clear preference for feminine brand names when contemplating a hedonic purchase, such as chocolate, they preferred masculine names for strictly functional products, such as bathroom scales.

These results have obvious implications for naming new products and could also be deployed in service of the tried-and-true. “Brands...may be ill-advised to discard a well-established masculine name,” the researchers caution. “However, it may be possible to imbue masculine brand names with warmth via feminine sub-brands, brand extensions, or logos. For instance, Fiesta is a linguistically feminine sub-brand of Ford that could add warmth to the masculine corporate brand.”

ABOUT THE RESEARCH “Is Nestlé a Lady? The Feminine Brand Name Advantage,” by Ruth Pogacar et al. (Journal of Marketing, forthcoming)

SUSTAINABILITY

Why Luxury Items Can Be Good for the Planet

With concerns about sustainable consumption on the rise, the fashion industry has come under harsh criticism. Experts estimate that it is one of the world's worst polluters, accounting for 10% of global carbon emissions and 20% of global wastewater. A new study finds a surprising way to reduce the damage: by encouraging consumers to buy high-end goods.

The research team began by scraping data on sales of over 4,600 new and used shoes and purses from online retailers. It found that high-end products were more prevalent than mass-market ones in secondhand outlets, supporting its hypothesis that they have a longer life span—an important marker of sustainability. A subsequent study showed that consumers engage in more-sustainable behavior with luxury goods: They keep them longer and are likely to donate or resell them rather than discard them

when they are through. In further studies, participants considering how to spend a fixed amount of money chose multiple ordinary goods instead of one high-end item—but when prompted to think about the durability of the items in question, they opted for the high-end product significantly more often. In fact, when faced with an explicit trade-off between various product attributes, they rated durability as second only to style and just as important as price.

“Luxury brands and government agencies can collaborate to educate consumers about purchasing fewer, better goods that benefit consumers and the environment,” the researchers write. “Whenever possible, marketers of high-end brands should provide concrete estimates of products’ life spans...and promote the durable nature of their goods.”

ABOUT THE RESEARCH “Buy Less, Buy Luxury: Understanding and Overcoming Product Durability Neglect for Sustainable Consumption,” by Jennifer J. Sun, Silvia Bellezza, and Neeru Paharia (Journal of Marketing, 2021)



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TEAMS

How the “Liking Gap” Hinders Group Work

First impressions can set a lasting tone, but they are often flawed. Psychologists have documented a phenomenon known as the liking gap, whereby two people meeting for the first time routinely underestimate how much their counterparts like them. A new study finds that the liking gap occurs in group settings too—and affects how well groups function.

In one experiment, the researchers divided 159 participants into groups of three and asked them to converse. They then surveyed the participants individually about how much they liked each of their partners, how much they thought each partner liked them, and how much they thought their partners liked each other. On average, people liked their partners more than they believed their partners liked them, and thought themselves to be the least-liked in the group.

In a subsequent experiment, the researchers asked similar questions of engineering students who had worked together in design competitions for varying lengths of time. Here, too, people tended to underestimate the degree to which they were liked, regardless of how long they had known their teammates—and their dim views of their own likability reduced their willingness to ask others for help, give honest feedback, and work together in the future. A final experiment involving a broad sample of workers showed that the misperceptions were strongest



among peers and that they decreased team effectiveness and job satisfaction. It also found a possible explanation for the liking gap: People tend to focus on positive thoughts when reflecting on how much they like someone else (“I’m happy that she got a promotion”) but fall prey to more-negative ones when considering how others view them (“I got a promotion, so she might be jealous”).

Managers should think carefully not just about how teammates regard one another but about how team members think they themselves are regarded, the researchers say; correcting misperceptions could boost team satisfaction and performance. “If only people knew... how positively their teammates actually felt about them, they might communicate better, feel more included on their teams, and be happier overall with their jobs,” they write.

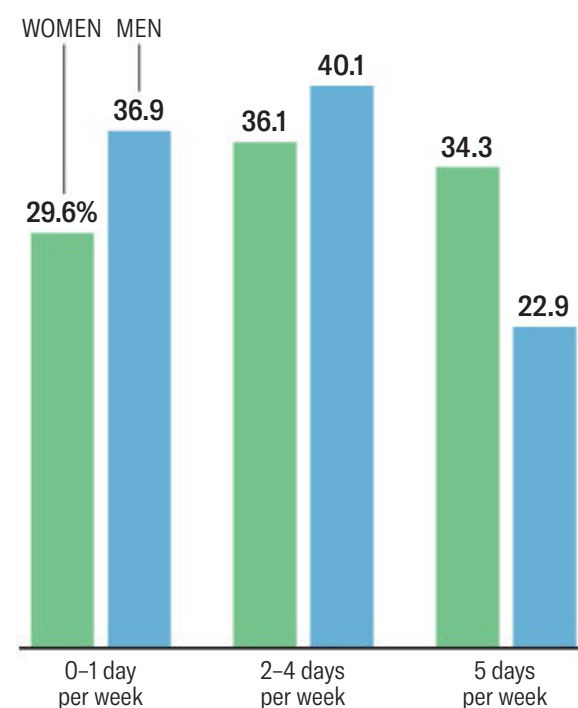


ABOUT THE RESEARCH “The Liking Gap in Groups and Teams,” by Adam M. Mastroianni et al. (Organizational Behavior and Human Decision Processes, 2021)

GENDER

Another Career Risk for Women?

In surveys of 30,000 U.S. college graduates with young children conducted over the past year, far more women than men said they’d like to work from home full-time—a potentially concerning finding in view of evidence that off-site employees have lower rates of promotion.



Source: Nicholas Bloom



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Chia-Jung Tsay, an associate professor at the UCL School of Management, asked 1,855 study participants to predict the winners of a total of 19 venture capital pitch competitions after being assigned to review the contestants' presentations in various ways, including as videos with sound, silent videos, sound recordings, and transcripts. She found that the silent videos best enabled people to identify the entrepreneurs the investors funded. **The conclusion:**

In Entrepreneurial Pitches, Stage Presence Is Everything



Professor Tsay, DEFEND YOUR RESEARCH

TSAY: Most investors would say that when they're deciding which start-ups to back, they focus on interesting ideas, talented founders, and substantive business plans. But across 12 studies I found that people could predict VC funding decisions based not on the actual content of entrepreneurs' pitches but

on how they were presented, especially body language and facial expressions. Often people watching the silent videos took only a few seconds to correctly identify which pitches had been favored by the investors. In my studies the visuals influenced judgment more than words or other information did.

HBR: How do you know it wasn't well-designed, information-rich PowerPoint slides that made the visuals so compelling? The entrepreneurs in the competitions I looked at didn't use slides, so it was simply their own physical presence that had such a profound impact on decisions.

So both the VCs and the study participants made snap judgments based on what they saw, not what they heard or read? Yes—but without being fully aware that visuals were having such a strong effect on them. This makes sense. Entrepreneurs need passion, engagement, and energy to be successful, and it's possible to convey all those things without words. There's something about the way presenters carry themselves as they walk onto the stage and then make pitches that may reflect their level of preparation and commitment.

But surely the idea and plan count for something, right? We can't be certain about the VCs, but the study participants who received more information about the start-ups by reading transcripts or listening to the pitches with or without video felt more confident about their picks than participants who saw only the silent videos. But the participants who got more information were also less likely to identify the entrepreneurs who won over the investors. This underlines the discrepancy between what people say they value and the information that actually drives real-world decisions.

A future step would be to look at the winning start-ups' outcomes to see if letting visuals drive decisions is a sound investment strategy.

Could it be that professional investors heard something in the presentations of those entrepreneurs that the amateur study participants didn't? Great question. That was one of my first guesses too. So I brought in



Entrepreneurs need passion, engagement, and energy to be successful, and it's possible to convey all those things without words.

amateurs with little or no experience with start-ups as well as experienced entrepreneurs and angel and repeat crowdfunding investors to review the pitch competitions. It turns out that both the experts and the novices were best able to pick the actual winners based on the silent videos. Professionals may be more knowledgeable, but they seem to be similarly influenced by visuals.

Could this all boil down to people's tendency to favor attractive entrepreneurs—or worse, white men who look most like prototypical Silicon Valley founders and VCs? You might think that. But my study participants weren't able to correctly identify the competition winners at rates significantly over chance using photos alone. So it seems to be less about gender, race, and attractiveness than about dynamic visual information that conveys passion and energy. Of course, many other studies have demonstrated the professional benefits associated with representing the majority-group race or gender or being deemed beautiful or handsome by society. That's not just in entrepreneurship but in other domains as well.

I should note that I also varied my experiments to check for participants' bias on these issues and their perceptions about the biases VCs might have. In some studies I asked, "Who won?" In others I asked, "Who do you think should win?" This might seem like a minor nuance, but it's important. With "Who won?" people can say, "Well, I'm not biased, but the judges probably are, so they chose him or her—for spurious reasons." Phrased differently, when giving their own opinions, most people

try to avoid showing bias based on gender, race, or looks. But my findings were consistent under both conditions. The predictions of people who watched the silent videos best matched the VCs' decisions.

What was it about the winners' visual presentation that was so captivating? We've published previous research on the importance of hand gestures when showcasing a new product. Is it that kind of body language? Posture? Facial expression? It's the passion that comes through in the pitches, which is reflected in a constellation of ways, including energy, gesture, and expression. When I asked participants to identify not the winners but the most passionate entrepreneurs, their choices mapped to the actual winners.

What's your advice for entrepreneurs making pitches? Develop more stage presence and worry less about your business plan? I think it's still important to hone your idea and polish your content. But you should also acknowledge the importance of your visual impression, especially at the start of your pitch, and spend at least a little more time on it. You should consider how you might convey your passion about your idea in a way that feels authentic to you. The judges are likely to assume your enthusiasm reflects a high-quality product and start-up.

What about VCs? Can they guard against this potential visual bias that might or might not play out for them? I'm hesitant to call it a bias until that's empirically shown. It's more

like a preference or a shortcut. In some domains people are acknowledging the issue and making attempts to guard against possible bias. For example, one study showed that blind auditions of musicians, where those evaluating the performers couldn't see them, resulted in the hiring of significantly more female musicians. But well-intentioned as these efforts are, they could lead to a discrepancy between what the judges base their decisions on—sound only—and what the audience enjoys or doesn't, which includes the visuals.

Right, because how you carry yourself and how people perceive you are important in most jobs—whether you're a musician or an entrepreneur. Yes, passion and confidence are related to successful outcomes. That said, if you want to guard against a dependence on visual information, one suggestion would be to avoid work conditions that prompt people to take mental shortcuts. You want to reduce the cognitive load on people so that they have more time to think—for example, by not overwhelming decision-makers with tons of information in a short time frame.

You just described the conditions of a VC pitch competition—lots of ideas and business plans, delivered quickly, all in one day. Indeed. And the same would be true in a more real-world setting if the investors you're approaching are taking a lot of meetings and hearing a lot of proposals. They're going to remember the people who are somehow able to inspire without saying a word. ☺

Interview by **Juan Martinez**
HBR Reprint F2105B

HOW WE DID IT



The CEO of UPS on Taking the Reins Amid Surging Pandemic Demand

by Carol B. Tomé

WHEN I DECIDED to accept the role of chief executive officer of UPS, in the late winter of 2019, it seemed like a straightforward choice. Having recently retired from Home Depot after 24 years of service, nearly two decades of them as CFO, I wasn't necessarily looking for a new job. But I'd been a UPS board director since 2003, and when the board started searching for a successor to the outgoing CEO, the directors created a leadership profile that matched my experience and skills. Up-and-coming internal candidates needed more time to develop, and as an outsider-insider,

I could lead the company until they were ready.

I knew that UPS was an amazing organization with a powerful brand, a culture and values perfectly aligned with my own, operations in more than 220 countries and territories, and roughly half a million talented employees whom I hoped to inspire around a shared purpose. Because the company's stock had been flat for six years, there was also an opportunity to create value for shareholders. And, frankly, my husband was keen to get me out of the house and working again.



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So at the time, it was easy to say yes to the position. I formally accepted at the beginning of March 2020 with a plan to officially transition in June. Quickly, however, the job became a whole lot more complicated. On March 11 the World Health Organization declared the Covid-19 outbreak a global pandemic, forcing many of us to shelter in place and UPS and its employees to step up its essential service as never before.

Not only did we need to keep our sorting facilities operational and our vehicles and airplanes moving but we had to meet a surge in demand that quickly matched peak holiday-shipping volume and never abated. I'd planned to spend my first few months as CEO on a listening tour, traveling to a number of our more than 2,000 operating facilities around the world and talking to employees. Instead I found myself in a whirlwind of activity, working with the rest of the leadership team to push our way through the pandemic while also planning our future.

Over the past year we've done just that. In fact, the Covid-19 crisis became a great crystallizer. Even as we did everything necessary to maintain our current business, we honed our purpose. We strategized. We reorganized. We prioritized. We divested. We invested. And I believe we've come out of it with a stronger, more engaged team.

PRINCIPLES AND PURPOSE

As a 114-year-old company that moves the equivalent of 2% of the world's GDP and 6% of the United States' GDP each day, UPS has a long and positive legacy that any CEO would want to build on. When I officially took the reins of the

company, I started with that premise. I invited our top team to a two-day, Covid-safe offsite at my farm in north Georgia. In that bucolic setting, and with help from a third-party facilitator, we candidly debated which aspects of the company we should carry forward and which might need to change.

We eventually settled on five key principles and priorities to which UPS would adhere. First, we'd stay grounded in the values of our cofounder Jim Casey, including integrity, efficiency, constant learning and improvement, and a strong focus on both customers and employees. We would also maintain our brand relevance, keep our balance sheet and credit rating solid, protect our dual-class ownership structure, and continue to pay a dividend. Everything else would be up for review.

Our purpose statement was the next focus. UPS has always been very clear about *what* it does, but the *why* was a little vague. As the Cheshire Cat explains in Lewis Carroll's *Alice's Adventures in Wonderland*, when you don't know where you're going, any road will take you there. We needed to clarify our mission. I didn't come in with a preconceived notion about what that should be, however. Instead I listened to my top team at the retreat and to others in Zoom meetings, since I couldn't meet everyone face-to-face as I'd intended. We decided on "Moving our world forward by delivering what matters." Specifically, we wanted to grow our global business by serving customers, offering excellence and value, inspiring our people and partners to do their best, and leading by example as a responsible company.

One other big part of UPS that we decided to revamp was our decision-making structure. Prior to 2020, when employees or teams had an idea, they had to present it to one of 21 committees, which would then push the proposal up the ladder to a final sign-off by the "management committee," often including the CEO. We scrapped all that. Now we have six review boards, which have the power to approve some new projects even without input from the most-senior executives. When we do get involved, we do so as a "leadership team" not a "management committee." We move much faster now.

A related move—symbolic but important—was to change the name of our executive offices in Atlanta from the Plaza (cold, intimidating, and formal) to Casey Hall (warm, inviting, and casual). Again, we wanted to emphasize a shift from top-down management to collaboration across levels, functions, and departments.

The leadership team also did an eye-opening strategic exercise: Together in a conference room, we forced ourselves to review a whiteboard of top projects in progress at UPS and put colored stickers next to each one—red for stop, green for continue. Green dots went up immediately, but people seemed hesitant to dole out red ones. I told them they couldn't leave the room until they did. And lo and behold, once all the stickers had been placed, we realized that we were pursuing some initiatives and activities (our wholly owned freight business, for example) that didn't promise to add a lot of value. Meanwhile, one of our most important (and most green-dotted) projects—a



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plan to speed up time in transit, which is the holy grail of delivery company metrics—wasn't scheduled to finish for another year. Similarly, our efforts to gain market share among small- and medium-size enterprise (SME) clients, a growing customer category especially during the pandemic, weren't yielding enough fruit.

We realized that we should shift money away from the reds and into the greens, and doing so paid off. We were able to improve time in transit within four months, and in the first quarter of 2021 our U.S. average daily volume among SMEs grew nearly 36%—to an all-time high. We also significantly ramped up our technology and digitization investments and our efforts to reduce the heavy carbon footprint associated with our fleet of more than 500 leased and owned aircraft and thousands of package-delivery vehicles, which combine to travel billions of miles a year. We're leaning into offset programs and green technologies, including our rolling laboratory of more than 13,000 alternative-fuel and advanced-technology vehicles—and we recently committed to be carbon neutral in all our operations by 2050.

With our mission, structure, and priorities in place, we next identified meaningful metrics for tracking progress toward our goals. Yes, even in the middle of a pandemic, we senior leaders felt this was important. Demand for our business was surging, so this was the time to pursue what we cared about most.

To measure our commitment to putting customers first, we now focus on our Net Promoter Score, which had been in the 30s (on a scale of 0 to 100). Our

aim is to lead the industry in end-to-end customer experience with a score above 50. We're doing this by listening, learning, and acting across 16 key customer journeys, including account setup, package pickup, and claims resolution. On the innovation front, a relentless focus on productivity and effective capital allocation will result in both operating margin expansion and a higher return on invested capital in 2021. And to determine whether we're delivering on our promise of being people-led, we now routinely review surveys showing how many employees are likely to recommend UPS as a place to work. Since I started as CEO, we've seen improvement in that number: It has climbed from 51% to 57%, and we're working hard to raise it above 80%.

AN IMPRESSIVE WORKFORCE PERFORMANCE

The fortitude and engagement of UPS employees are what move the company forward. Consider their can-do reaction to the pandemic. Once we changed our hub and delivery procedures to keep everyone distanced and safe, our people donned their personal protective equipment and soldiered on, ensuring that our business clients could ship to one another and that end users received all their must-haves, from masks to new freezers, cat food to diabetes medication. The step change in e-commerce demand was immediate, and our teams' response was impressive.

Because of our global footprint, every day brought a new challenge. Countries would start to open and then shut down, so we were always working with various

FACTS & FINANCIALS

UPS

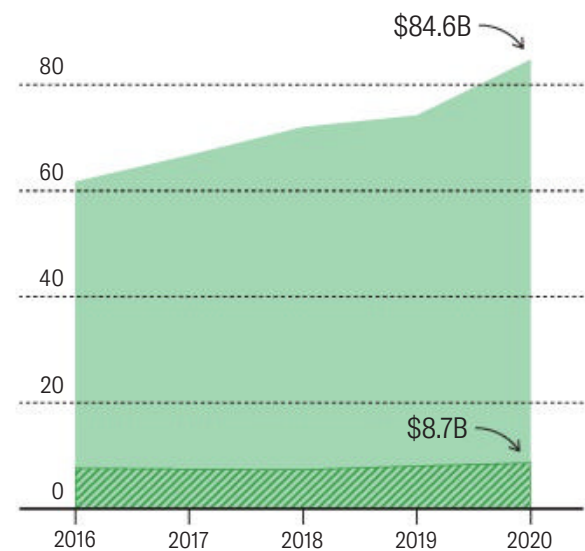
Founded: 1907

Headquarters: Atlanta

No. of employees: 543,000

Revenue Operating income

\$100 billion



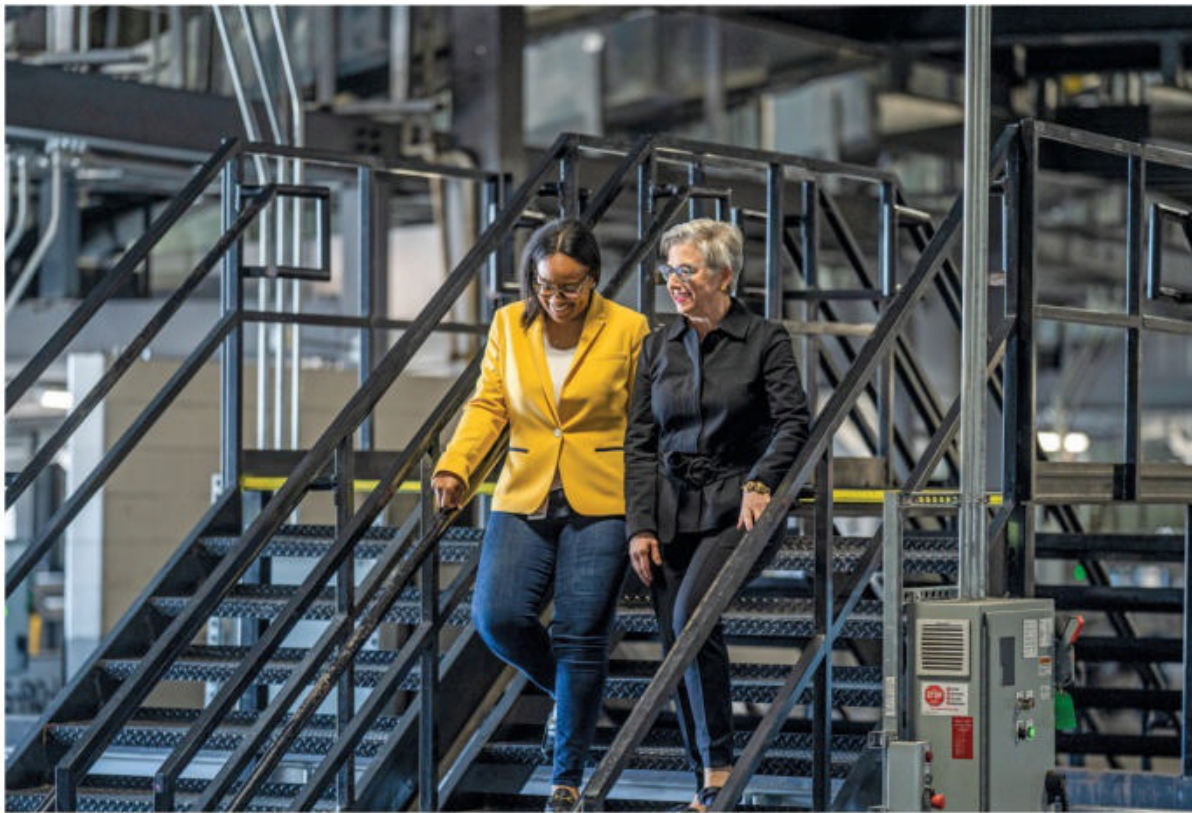
Source: UPS

authorities to make sure that our pilots could land and our employees could operate on the ground. We had one situation in China when a sorting-facility security guard tested positive for Covid, so 200 UPS employees were confined to the building for three days. We scrambled to provide food and water and keep them comfortable until they could leave.

In the United Kingdom we were also dealing with new cross-border trade restrictions as a result of Brexit. And although our aircraft hub-and-spoke system could accommodate the huge spike in demand and the increasing complexity of delivery, we needed more staffers, fast. In the second quarter of 2020 alone, we hired 40,000 people to help us manage the new normal of year-round holiday-level volume.

That expanded workforce kept us going—despite personal upheavals and additional political crises in the United States. In the days before I was set to officially take over as CEO, the gruesome video of the slaying of George Floyd appeared. I had videotaped a

●● We're on track to deliver at least one billion doses of the Covid-19 vaccine globally by year's end—with 99.9% reliability of service.



Carol Tomé walks through a UPS facility in Nashville with Cher Porties, president of UPS Mid South.

speech that shared my excitement about taking the reins of UPS and my enthusiasm about its future. The message—basically, “We’re going to kick ass and have some fun doing it!”—had now become entirely inappropriate. So I replaced it with a letter in which I described my emotions—anger, shame, sadness—and explained that I wanted to turn all of that into values-led action. UPSers would step up, just as they had at the onset of Covid-19.

To that end, the company has since committed millions of dollars to the National Urban League and other activist organizations, commissioned an enterprise-wide salary review and pledged to support pay equity, changed some antiquated employee-appearance policies to allow for natural and facial hair, and implemented new programs to train team members in bias avoidance, respect, and professionalism.

I promoted Laura Lane to be chief corporate affairs, communications, and sustainability officer (I call her our chief purpose officer), and I chose Charlene Thomas to take on the new role of chief DEI officer, reporting directly to me. Since I started, we’ve added five new board directors: three women, one of whom is Asian, and two African American men. Perhaps most striking, given the unique circumstances and heavy workloads we saw in 2020, our employees, with our encouragement, committed to another million volunteer hours in underserved Black communities.

Our people rose to further challenges last winter, first by managing our holiday peak season (a period for which we added another 100,000 temporary workers) on top of pandemic volumes, and then, as 2021 began, playing a crucial role in delivering the newly developed Covid-19 vaccines. UPS has been

in health care logistics for 15 years, and now we have three freezer facilities—in Louisville, the Netherlands, and Singapore, that enhance our cold-chain distribution. We’re on track to deliver at least one billion doses of the vaccine globally by year’s end—with 99.9% reliability of service. Within 24 hours we can pick up a shipment with an 18-wheel truck, drive it to a local airport, load it onto an aircraft, fly it to our Worldport hub in Louisville, process it, load it onto another feeder plane, fly it to a destination, put it on a smaller truck, and drive it to a hospital or a pharmacy.

Our people make that kind of performance possible, fueled in part by the mission and strategy work that our senior leaders and I—with help from their teams and input from the wider organization—did at the beginning of my tenure. Instead of competing priorities, they have clarity of purpose, which helps them both do their jobs effectively and enjoy the work. This has led to record profits and a double-digit operating margin in our U.S. business, along with record profits in our international segment.

When I decided to become the CEO of UPS, I could never have predicted the upheaval the company and the entire world would face over the following 15 months and beyond. But I wouldn’t have taken the job if I hadn’t been confident that our people and our organization could push through whatever challenges come our way. 🧘

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THE HUMAN IMPERATIVE

NAVIGATING UNCERTAINTY IN THE DIGITAL AGE

Mired in uncertainty, are leaders equipped to make the right choices? The 2021 Global Peter Drucker Forum will zero in on the enduring questions raised by years of catastrophe. Many look to technology to provide the confidence needed to navigate through uncertainty. Yet there is a countercurrent emerging that calls for reasserting the human role. Which is the best way forward, and how can we ensure that it prevails?

SPEAKERS INCLUDE



Alex Adamopoulos
CEO Emergn



Amy Bernstein
Editor Harvard
Business Review



N.K. Chaudhary
Chairman
Jaipur Rugs



Gemma D'Auria
Senior Partner
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Erica Dhawan
CEO Cotential



Tom Davenport
Professor
Babson College



Tammy Erickson
Leadership
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Julia Kirby
Sr Editor, Harvard
University Press



Jim Loree
CEO Stanley,
Black & Decker



Don Tapscott
Chairman Blockchain
Research Institute

—
Future-
Proofing Your
Organization
42

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Return-to-Work
Programs
Come of Age
49

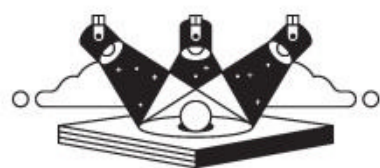
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Elevate
Employees, Don't
Eliminate Them
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Rebuilding Your Workforce





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REBUILDING YOUR WORKFORCE



AUTHORS

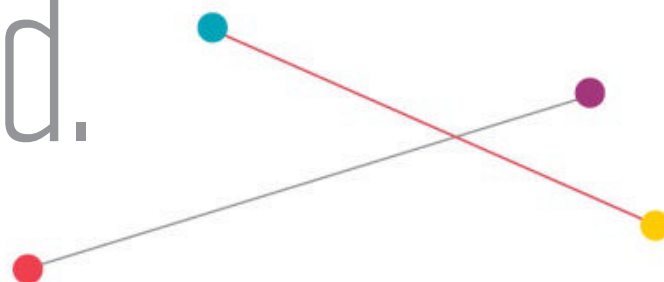
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Future-Proofing Your Organization

Prepare your team to stay ahead in the post-pandemic world.



TECHNOLOGY WAS ALREADY changing the nature of work before Covid-19 took hold. Innovations were redefining the basis of competition in most industries and, consequently, the talent companies need to win over the long term. The pandemic sidelined the efforts of most companies to address these challenges and close critical capability gaps. Many had to lay off 15% or more of their workforce. Covid-19 required that the search for new talent—with new capabilities—take a back seat to economic survival.

But as businesses rebuild in the aftermath of the global pandemic, those that take the opportunity to remake and future-proof their workforce will pull far ahead of rivals. Even before working from home became widespread, digital

technology was transforming how and where work gets done and how many people are needed to do it. Consumer products companies, to take just one example, have traditionally employed hundreds of people to monitor purchases and inventory to ensure that the right products get to the right places at the right time. Predictive analytics—fueled by real-time point-of-sale, manufacturing, and logistics data—is changing that, reducing the number of employees required for the work, changing the skills they need to be successful in their new, technology-enabled roles, and allowing more and more of them to work remotely.

So how should companies rebuild? In the following pages we draw on

research by Bain & Company involving more than 300 large companies worldwide and every facet of the global economy, from manufacturing to retail to health care to technology. Half of those companies are headquartered in North America or Western Europe and the rest in South America, Asia Pacific, the Middle East, or Africa. We have identified a select group of the companies that are already building technology-enabled workforces. No matter their sector or geography, they all seem to adhere to six practices in the course of assembling and managing their teams. In the following pages we offer those practices for companies to follow as they regroup and reorganize for the inevitable recovery.





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1 Think Ahead When Defining Business-Critical Roles

Not all jobs are equally important. Research by Bain and others indicates that fewer than 5% of an organization's roles account for more than 95% of its ability to execute on its strategy and deliver results. But which 5%? As we emerge from a pandemic that has challenged assumptions about working productively, companies need to rethink which skills will be most important in an increasingly tech-enabled future, develop them in the current workforce, and actively recruit for them.

Smart companies began to do that even before Covid struck. Woodside Energy, a leading Australian natural gas producer, is one. When the recently retired Peter Coleman became CEO, in 2011, the company was a typical LNG producer with huge, multibillion-dollar projects and complex onshore and offshore operations. Coleman and his team recognized that Woodside's ability to navigate the challenges of the future would partly depend on enhancing its conventional technologies with data-driven breakthroughs.

To test the impact of big data science and digitization on the company's strategy and competitiveness, Woodside started with its energy-production operations. Like most other oil and gas producers, it had relied on seasoned engineers to oversee each asset. When issues arose, the engineers developed mitigation plans that were based on their personal experience and informed by the data collected from their sites. They played a business-critical role at Woodside.

The advent of new sensor technology, combined with access to low-cost computing power and big data analytics, meant that the company's asset operators could make better and faster decisions by using a broader range of more-accessible data sources and data science expertise. Accordingly, Woodside began experimenting with advanced analytics and machine learning across its offshore and onshore operations, using a combination of internally built and market-sourced solutions. The workforce started using AI-enabled tools—incorporating Woodside's 30-plus years of production experience across all its sites—to

identify ways of improving safety and productivity.

Integrating technology into ways of working meant that the definition of “critical skills” at Woodside expanded. Data scientists, along with experienced asset operators and engineers, had become crucial to the company's success. Starting in 2015, Woodside established a dedicated team of data scientists. The team now focuses on seeding data science and other digital skills throughout the organization using a range of new tools and platforms. The company recruits data scientists from the best Australian and international universities who work with and learn from Woodside's operationally seasoned team members.

Woodside's rethinking of business-critical skills has contributed to a growing perception of the company as an innovator in oil and gas. As other companies emerge from the pandemic, they should take a leaf from its book and think about the capabilities that will be critical in tomorrow's world—not today's.

2 Redefine What Great Looks Like

Traditional employee-assessment approaches work well when the jobs people will be asked to perform in the future are largely the same as the ones they (or others in the organization) are doing today. But those approaches break down if the nature of that work

IDEA IN BRIEF

THE PROBLEM

Even before working from home became widespread, digital technology was transforming how and where work gets done and how many people are needed to do it.

THE OPPORTUNITY

In the aftermath of the pandemic, companies can rebuild a workforce that is better equipped for an economy in which routine and repeatable tasks are increasingly machine-enabled.

THE SOLUTION

Drawing on research by Bain & Company involving more than 300 large firms worldwide in every facet of the global economy, the authors identify six practices for companies to follow as they regroup and reorganize for the inevitable recovery.



More than 60% of a company's future roles can be filled by current employees, assuming that adequate programs are in place.

changes, causing companies to struggle to identify candidates who can take on the new tasks. Like our assumptions about which capabilities are mission-critical, our assumptions about what success looks like must change in the wake of the pandemic.

Fortunately, new tools and techniques that utilize people analytics and behavioral science can help companies define “what great looks like” in a particular role and identify employees who already have the needed skills or could develop them with training. This allows companies to devise talent development and recruiting strategies to help meet their needs.

One such approach was pioneered by the Chemistry Group, a UK-based people analytics organization that helps businesses craft robust job descriptions for new roles—descriptions that include not only basic responsibilities but also the traits, behaviors, and skills each role demands. By rigorously defining what great looks like, companies establish a benchmark against which they can recruit—both internally and externally.

A leading mobile-phone operator has applied Chemistry's tools and approach with great success. Responding to changes in the smartphone market, the company's leaders saw that they needed to shift the retail operating model from pushing equipment sales to emphasizing customer intimacy and service. To achieve this transformation they encouraged employees to adopt new mindsets and behaviors through training and coaching.

The mobile operator also created a new role in each of its retail stores focused on enhancing the customer

experience. Using behavioral testing and survey data, leaders developed a profile for what great would look like in that role. The company then assessed its 22,000 employees to discover critical capability gaps. The result was a list of employees with the potential to succeed in the job, and training modules were designed to help get them ready quickly.

The company has also developed interactive recruiting tools to screen more than 10,000 job applicants a month for this role without human involvement. Using an online program, candidates respond to a series of scenarios they'd be likely to encounter. Improved recruitment has enabled store managers to spend less time supervising and mentoring, permitting them to serve customers on the floor. These initiatives have helped save more than \$7 million in operating costs and have garnered positive feedback from 85% to 93% of customers surveyed.

Coming out of the pandemic, companies will find that what people do and how success is defined must change. They'll need to recruit people who are comfortable with the new normal. Smart companies will leverage technology now to help them figure out how.

3 Don't Cut Back on Management Development

Although the Covid-19 pandemic has temporarily loosened labor markets in some areas, many jobs in software engineering, digital design, and data science remain challenging to fill. Accordingly, the best companies look to management development, often supported by technology, for reskilling

their current workforces and filling at least some of their capability gaps with existing employees.

The good news is that reskilling done well does help. In our experience, more than 60% of a company's future roles can be filled by current employees, assuming that adequate programs are in place. Reskilling is also cheaper than the “fire and hire” model for filling new business-critical roles. For one thing, the direct costs of severance associated with workforce reductions can be substantial—as can damage to the morale of remaining team members. And recruiting new talent can be expensive, particularly for high-demand sectors such as data science, digital marketing, and software engineering.

Guardian, one of the largest mutual life insurers in the United States, provides an example. Like many other companies, it is undergoing a broad digital transformation focused on modernizing technology, data, and processes to improve performance and support a customer-centric culture. Deanna Mulligan, Guardian's CEO until October 2020, and her team knew that to be successful, the company had to extract the maximum possible value from its treasure trove of data. So they broke down historical data silos at the company and created an integrated data lake. Converting that raw data into usable customer insights required many more data scientists than the company had or could realistically recruit. To fill the gap Guardian has looked to its actuaries, moving them into broader data science positions and training them in a number of essential new skills, such as predictive analytics.



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Similarly, Guardian recognized that it needed to shift far more of its marketing energy and talent from traditional avenues to digital channels. The company used assessment tools to identify the members of its existing marketing organization with the greatest potential to succeed in digital marketing roles and then invested in training programs to provide them with the knowledge and skills to thrive in those new positions.

In times of crisis it's tempting for companies to slash training and development budgets. But that's not a smart move. The pandemic will, if anything, speed up the obsolescence rate of professional skills, and it will be easier to teach old dogs new tricks than to find new dogs who are already trained.

Which brings us to the next practice.

4 Tech Up the HR Function

Companies that rely on large workforces will need to change the way they manage employees. This will be even truer for the dispersed workforces that have become common during the pandemic. From an HR perspective, a model that relies too heavily on frequent human interaction will not be cost-effective.

Ping An provides a glimpse into the future of HR. Founded in 1988, Ping An (Chinese for “peace and safety”) is China's largest insurer, with premium revenues close to \$100 billion and a market value of more than \$180 billion. It relies on nearly 1.5 million agents to build trust with the company's policyholders and sell its array of insurance and financial products, which means

that the company has to hire thousands of new agents each year. To accomplish that, Ping An utilizes big data and artificial intelligence in its recruiting and management development efforts.

To identify the characteristics of top performers, Ping An collects and analyzes data on its existing agents (including performance data, customer visit records, and training information) and combines it with the views of outside experts regarding the importance to each agent's productivity of career ambition, customer network, adaptability, and sales ability. This information fuels AI-enabled interviews that generate questions and check candidates' responses against an answer pool to determine the best matches on the characteristics that matter most.

Using new technology and big data, Ping An has significantly improved its

ability to identify, recruit, and retain great talent at a dramatically lower cost. For example, the company has increased its 13-month retained-agent ratio to 95% while cutting close to \$90 million in costs—and keeping pace with the staggering demand for new agents.

Every company can do more in this area. As businesses acquire more and more data on employees and contractors—regarding each person's skills, performance, potential, and ability to learn new skills and take on new roles—people analytics will be applied across the spectrum of HR activities. Technology will enable companies to do a far better job of recruiting, deploying, developing, and retaining talent, at a lower cost. We know of no company that is fully exploiting the workforce information it has. Most organizations have barely scratched the surface.





In times of crisis it's tempting for companies to slash training and development budgets. But that's not a smart move.

5 Get People to Engage with Tech

Companies and workers everywhere are increasingly engaging with AI-enabled processes like Ping An's recruitment system. This trend will only accelerate after the pandemic, as more and more people transact and work in the virtual world. Unfortunately, few companies—or employees—manage engagement with technology in a coordinated way, so employees become suspicious of it, and the technology underperforms management's expectations.

That's a pity, because when people and tech work together, everyone benefits. USAA, a leading provider of financial products and services to current and former members of the military and their families, provides a case in point. Within USAA's insurance operations, member service representatives handle more than 5 million claims each year, managing all aspects of the process. Providing the very best customer service means making claims processing more convenient, faster, more accurate, and less costly for USAA members. Accordingly, USAA leaders have taken steps to ensure that service representatives are supported by machine-learning algorithms that use artificial intelligence to more accurately and efficiently estimate the extent of vehicle or property damage.

In deploying these AI-enabled tools, USAA's technology team has collaborated closely with the company's service representatives. The team relies on them to “train” its AI model—ensuring that the model learns to “think” like an experienced USAA rep. The company's

loss adjusters use the model in estimating customers' insurable losses, but they can also make in-the-field adjustments to its estimates with an explanation, which feeds back to the AI so that the model can be continually updated and improved. Finally, machines are directly taking on lower-value tasks such as fraud detection and prevention, allowing claims teams to focus more deeply on connecting with and providing guidance to USAA members who are negotiating the claims system, which can often be a trying process. This kind of work is more satisfying for people and better leverages their capabilities.

The results are clear. Thanks to USAA's integrated approach to developing and deploying AI-enabled tools and the people who use them, the company has remained a leader in both customer and employee loyalty. In 2020 it received top marks among life insurers from J.D. Power. And in characterizing the results of a 2018 study of USAA by the customer research organization Raddon, one newsletter dubbed the company “the most beloved financial brand on earth.” That year Great Place to Work recognized USAA as one of its best workplaces on the basis of employee advocacy. As important, USAA expanded its market share in insurance and financial services with military personnel and their families from 63% in 2010 to 75% in 2019.

6 Figure Out What Tomorrow's Stars Want from You

Even without the pandemic, tomorrow's managers would have been looking for a workplace value proposition

very different from what enticed workers 10 or even five years ago. By 2030 Millennials will make up 75% of the workforce, according to the U.S. Bureau of Labor Statistics. This generation wants it all: flexible schedules, diversity in the workplace, engagement, autonomy, and a meaningful connection with their employers. But with the trauma of Covid-19 fresh in our minds, we have all rediscovered the importance of meaningful jobs, supportive colleagues, and flexible employers.

For an idea of what companies will need to do to attract and retain talent in the future, take a look at ServiceNow, a \$3.5 billion enterprise software and services company based in Santa Clara, California. Unlike many of its Silicon Valley rivals, ServiceNow does not rely on workplace trappings such as fancy offices and a gourmet cafeteria offering free lunches and bottomless lattes. Instead the company focuses on the factors that are most critical to retaining and inspiring employees: a culture of inclusion, a workplace that makes getting things done fast and easy, and top-notch rewards for people who “stay hungry and humble.”

In 2017 the company's then-CEO, John Donahoe (a former CEO of Bain), and his team set out to transform ServiceNow from a technology- and engineering-centric organization to a people- and customer-centric one. They started by rebranding the company, both externally and internally, as an organization dedicated to “making the world of work, work better for people.”

Pat Wadors, who was ServiceNow's chief talent officer until mid-2020, and Alan Marks, the company's chief



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marketing and communications officer, joined forces to present the company's new proposition to employees and potential recruits. They discovered that in addition to great compensation, tomorrow's workers crave a deep connection to their employer and its purpose. They want to be part of an organization that is doing something worthwhile, such as making work easier for everyone. They want to feel a sense of inclusion and belonging—to be part of a culture that encourages all employees to bring their very best selves to their jobs, every day.

Accordingly, ServiceNow has built a culture of diversity and has taken dramatic steps to foster inclusion in the workplace. This distinguishes it from other tech companies, many of which view diversity as a "hiring issue" rather than a cornerstone of their talent strategy.

ServiceNow also discovered that prospective employees aren't much different from the company's customers, in that they want the company to work better for them. So it deployed many of its own products internally—an effort leadership calls *Now on Now*—to make onboarding and routine administrative activities easier and faster. The company's people processes are human-centered and growth- and development-focused. "People are treated like adults," one employee told us. "Not a lot of clutter gets in the way of getting things done." Finally, ServiceNow's liberal work-from-home and personal leave practices make it easier for employees to work when and where they want, supporting a culture of productivity, not "face time." These practices proved

particularly valuable in the midst of the pandemic.

ServiceNow's unique approach has not gone unnoticed. When Glassdoor surveyed current and former employees of the company, 69% of respondents indicated that they would recommend ServiceNow to family members or friends as a place to work—a level of employee advocacy that puts the company in the top 5% of employers globally.

TECHNOLOGY IS FUNDAMENTALLY changing the nature of work. But the approach that most companies take to workforce planning and HR management hasn't changed much at all over the past two decades. As companies rebuild their workforces in the aftermath of Covid-19, they must move into the digital age. Talent planning and management must become more strategic, more holistic, more rigorous, and more data-driven. Organizations that rebuild following traditional analog processes will be outpaced by more-prescient competitors. Given how much time it will take to build a winning talent pool, companies must begin future-proofing their organizations today.  **HBR Reprint S21051**



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**Carol
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Return-to-Work Programs Come of Age

Companies can benefit from hiring mid-career professionals who've taken a break.



DURING THE PAST few years Amazon has been experimenting with programs to recruit mid-career professionals who've spent a few years away from the workforce. Like most other companies, the online retailer started out small, hiring a few dozen people at a time in pilot cohorts. But in June 2021 Amazon made a stunning announcement: It would expand its return-to-work initiative by hiring 1,000 returning professionals—



According to research by ManpowerGroup, 57% of male and 74% of female Millennials anticipate taking a career break for childcare, eldercare, or to support a partner in a job.

an order of magnitude larger than any other company's program. Each participant would be given coaching and mentoring as part of the paid 16-week program, with potential to land a permanent position at its conclusion. "We've formed a dedicated team that recruits specifically for professionals who are restarting their careers," says Alex Mooney, Amazon's senior diversity talent acquisition program manager. And instead of looking skeptically at résumé gaps or skills that may need refreshing, Amazon's recruiters are directed to focus on each candidate's potential.

Although the size of Amazon's initiative is unprecedented, return-to-work programs are not new: The first of them originated nearly 20 years ago. I've been working with them for almost that long, after resuming my career as a financial analyst at an investment firm following an 11-year break for childrearing. (Harvard Business School did a case on my reentry to the workforce.) I wrote a book on returning to work in 2007 and have written about it for HBR since 2012. My company runs training programs and produces conferences on relaunching, which allows me to both influence these programs and observe how they have evolved—and to identify the best practices that help them succeed.

The recession triggered by the pandemic has made the need for these programs especially acute. The downturn has been remarkably sector-specific: Even as many businesses closed and others downsized, companies in tech, finance, e-commerce, and other industries experienced record growth, which created demand for certain types of talent. At the same time,

in the United States, research by the National Women's Law Center indicates that roughly 1.79 million women and 1.75 million men have left the labor force entirely since February 2020, many of them to care for family members when schools and other support systems closed. This population is expected to resume full-time work, although over what time period is still unclear.

Even before pandemic-related career disruptions, return-to-work programs were becoming an important way for companies to hire professionals. According to research by ManpowerGroup, 57% of male and 74% of female Millennials anticipate taking a career break for childcare, eldercare, or to support a partner in a job—a much higher rate than was true for prior generations. Return-to-work programs not only provide a source of talent but also send a powerful signal to employees at all life stages and those who left the company to take a career break: This company recognizes that careers needn't be linear and normalizes the idea that professionals may leave for a time for personal reasons.

In this article I offer a brief history of how these programs have evolved, classify the types that companies offer, and detail best practices that can help participants and employers achieve their shared goal: Increasing the number of professionals who move on from a career break to succeed in a new role.

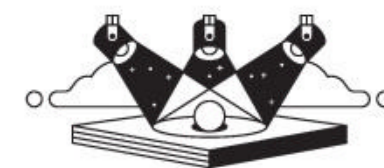
Bias Built on a Myth

Return-to-work professionals are educated, have great work experience, offer a mature professionalism, and

are at a relatively stable stage of life. Because they were employed in the past, they understand how to work in teams and with differing personalities, and they've navigated tight deadlines and high-pressure situations. They don't need to learn basic skills that entry-level employees often lack. They have cost-effective, easily accessible means to update skills or learn new ones through online courses (many of which are free), certificate or credentialing programs, and even additional degree programs. As predominantly female, this talent pool is of particular interest to companies focused on gender diversity.

All those attributes may seem obvious now, but for decades the idea that professionals on hiatus could resume their careers was inconceivable. An employee who left the workforce for an extended period would have outdated skills and diminished drive—or so it was thought. But in the early 2000s the male-dominated finance sector faced an urgent and now-familiar problem: As women advanced in their careers, more left the workforce, until the shortage of female talent in the mid-to-senior ranks became acute. In response, Wall Street drove the resulting innovation, starting with Lehman Brothers and UBS in 2005–2006. In 2008 Goldman Sachs and the consumer food products company Sara Lee offered the first corporate "returnships," with Sara Lee's led by its visionary then-CEO Brenda Barnes (deceased since 2017), whose own career had been interrupted.

Companies running these early programs recognized that the bias against mid-career job hunters was built on a



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myth. People who've interrupted their careers don't show less drive; in fact, many crave a return to paid employment. Often the biggest obstacle they face is a weakened sense of self from being professionally disconnected for an extended period in a society where identity is largely rooted in what someone does for work. That's one reason that relaunching is different from a regular job search: People who've taken a career break need to build back confidence, reinvigorate their networks, figure out what they want to do all over again, and then upskill or reskill—all on top of what a job search normally entails.

Over the past five years the urgency around both talent acquisition and diverse hiring pools has led to a sharp increase in the number of companies offering return-to-work programs. Roughly a third of the *Fortune* 50 now have them in-house for mid-career professionals. Since 2015 the STEM Reentry Task Force, led by the Society of Women Engineers and my company, has worked with 34 leading U.S. employers to establish their return-to-work programs and continues to train groups of program managers annually.

The need for top STEM talent and the interest in hiring women in technology have been major motivations to tap this talent pool; Facebook, IBM, Oracle, Apple, and other tech giants have active programs. It makes sense that the largest companies, which have the greatest hiring needs, are the most likely to run such programs. Among the *Fortune* 500 companies, fewer than 10% currently have one; meanwhile, return-to-work programming is only beginning to emerge in the public sector. Thus

the potential for the concept to grow is enormous.

Program Design

These programs come in all shapes and sizes, and companies should determine the length of the program, the size of participant pools, the times of year offered, the lines of business and managers involved, and locations according to what works best for them. The programs generally fall into two categories: *returnships* and *direct hire*.

Returnships. Most companies bring relaunchers in as a cohort, the way they bring in college interns in the summer. Cohort size typically ranges from five to 25 participants, although some companies have recently increased the number of participants in each cohort or the number of cohorts per year. Programs may last from eight weeks to nine months, with 12, 16, or 24 weeks being typical. Normally they don't take place in the summer, to avoid conflicting with the company's college internship programs, families' childcare needs, or vacations. Some returnship programs have moved to a "rolling admissions" format in which participants start at different times and form a loose cohort or class. In this format programming is primarily online and self-paced, and participants have occasional opportunities to gather with those who have "graduated" and been hired as employees.

Returnship participants are given customized onboarding and orientation sessions, professional development, technical training, and exposure to senior leadership. Usually each "relauncher" is assigned a mentor and

a buddy for additional support. As for actual work performed during the returnship, companies typically use one of two formats:

→ **Project-based.** The earliest returnships gave participants a short-term project, and the focus was on evaluating each person's performance, with high performers usually receiving an offer of permanent employment. But this format created a challenge: Absent a perfect match between participants and available full-time positions at the close of the program, some qualified participants could not be placed.

→ **Role-based.** To address that problem, some companies began recruiting program candidates for current open positions or those planned for the future, with the expectation that candidates who performed well during the program would move permanently into those roles.

Returnship compensation is closely linked to whether the participant is taking a specific role or is doing a project in an area where hiring is active. Payment may be on a prorated salary, stipend, or hourly basis. A best practice for determining returnship compensation is to look at the salary band for each role, pick a number toward the lower end, and prorate for the number of weeks in the program. If a participant converts to employee status at the end of the returnship, adjustments can be made according to factors an employer might typically consider for an offer: education level, work experience, geographic location, and so forth. That ensures room to adjust upward if appropriate.

When distinguishing among returnships, one phrase is especially



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important: “Intent to hire.” This indicates that the program is not like a student internship, with only the *possibility* of a permanent job offer at the end. Instead the company assumes that barring poor performance, the participant will convert to permanent status after completion of the program. That encourages everyone—recruiters, managers, and teams—to hire, onboard, and integrate participants just as they would ordinary full-time hires. Thus managers and teams are more likely to invest time and effort in developing relaunchers than they would be if they viewed them as contractors or temporary workers “dropped in” for a few weeks. On average, more than 80% of participants convert to full-time employees.

Direct hire. A less-common type of return-to-work program is the direct-hire model, whereby companies hire participants as full-time employees right from the start, with no trial period. Transitional support is provided through one-on-one coaching, online learning, and mentoring, since participants typically don’t start at the same time or as a cohort. One variation on this is the new Oracle Career Relaunch program, in which participants are hired as employees and start on the same day as a single cohort, benefiting from 12 weeks of supplemental programming as they begin their new roles.

Dell Career ReStart launched in 2018 as direct hire, and Ford Re-Entry, Boeing Return Flight, and P&G STEM ReLaunch changed over to direct hire after starting as returnships and experiencing high conversion rates in their initial cohorts or observing high rates in the programs of peer companies. As career breaks



become perceived as normal, and as companies become comfortable offering permanent roles to people with gaps on their résumés, more organizations may migrate to the direct hire model or adopt it at the outset.

To be eligible for either a returnship or a direct-hire program, participants must generally have had a career break of at least two years and prior work experience of at least three years, although companies often require five to seven years of experience (and sometimes more). Some programs, such as Ford Re-Entry and Amazon’s, include “underemployed” as part of their eligibility criteria. Oracle, Amazon, IBM, and Raytheon Technologies have lowered their career-break minimum from two years to one to include people who left work during the pandemic. The minimum break for Deloitte Encore is now just six months; for Accenture Return to Work it is 18 months.

For employers running global programs, local laws and regulations may dictate program length. For example, Australia requires a six-month minimum. China’s labor laws require a one-year work contract. Canada, Brazil, and others have mandatory probation periods for all new employees that are sometimes used in lieu of returnships.

Training

Training, both for relaunchers and for employees who interact with them, from the first interview to the last day of the program, is one of the hallmarks of a successful program.

For recruiters, managers, and other company stakeholders. After concluding a pilot program, companies frequently comment that they should have devoted more resources to training their managers. This training focuses on demographic information about the



Program orientation sessions cover topics such as goal setting, technology challenges, dealing with “impostor syndrome,” and how to network inside the organization.

pool of relaunchers, what their résumés and LinkedIn profiles look like, and how to talk during interviews about career breaks and past volunteer and paid experiences. It also involves adjusting the interview process to avoid missing out on high-potential candidates, discussions of level and compensation, how an “intent to hire” mindset affects manager-and-team relationships, and the importance of familiarity with the program and what happens at the end of it. For example, recruiters and managers must ensure that they convey respect for mid-career professionals during interviews. (Some interviewees report that recruiters sound like they’re reading from a script used for recent graduates applying for entry-level positions, which can feel demeaning.)

For relaunchers. Participants arrive with excitement, questions, and, frequently, great uncertainty as they embark on this new chapter in their lives. Topics covered at the orientation session include goal setting, normalizing concerns, “new elevator pitches,” technology challenges, when to ask a question, confidence building, dealing with “impostor syndrome,” how to network inside the organization, and how to engage with managers and teams.

The midpoint and the end of the program provide opportunities for relaunchers to take stock of where they are in their transition back to work and how much they have evolved since the first day. Meeting as a cohort with an expert facilitator (from outside the company) at those junctures provides a safe space where they can be honest and vulnerable without worrying about the effect on their performance evaluation

or relationship with their manager or team. They can review goals set at the program’s start, celebrate successes, voice concerns, troubleshoot, and course-correct together. This is also a time to prep for midterm and end-of-term evaluations by rehearsing how to respond to positive or negative feedback. The end-of-term session focuses on “life after relaunch,” whether participants will continue at the company or move on to a position (or a search for one) somewhere else.

For manager cohorts. Just as relaunchers benefit from being in a cohort, so do managers, especially if this is their first time participating in a return-to-work program. It is especially important that they meet before conducting midterm evaluations and before the “conversion decision” (whether to make a permanent hire). Managers need to understand the evaluation process, the timeline for decision-making, how to handle conversations about level and compensation, and how to give positive or negative feedback to participants. Other topics might be setting goals and expectations for relaunchers and specific situations in which managers might benefit from peer feedback.

Eight Steps to Success

After working with leading employers in a broad range of industries to build and expand their return-to-work programs, I can recommend eight best practices that every company hoping to hire relaunchers should keep in mind.

Identify an executive champion. Return-to-work programs don’t necessarily conform to all the practices a

company uses to hire its other employees. It is essential to have buy-in at the senior level and an executive champion to evangelize about the concept and run interference during the program launch. This person often pilots the program in his or her line of business, working directly with mid-level managers to provide budget and other assistance to get the pilot off the ground—and, crucially, to support full-time positions for relaunchers when the program ends.

Designate a program manager.

The program manager (PM) owns the program and is the center of all internal and external activity around it. As programs grow and scale up nationally and globally, the PM can ensure consistency across business lines or manage variations that may arise from countries’ differing regulations. It’s vital to establish a succession plan for program ownership in case the PM takes another role or leaves the company. Programs that lack strong leadership, are managed by committee, or have no solid succession plan in place may languish or close. For a savvy manager seeking to make a mark, proposing a return-to-work program and taking a leadership role in implementing it presents a rare opportunity to build one from scratch with senior-level visibility.

Banish the word “intern.” Treat program participants like the seasoned professionals they are. Although returnships share obvious characteristics with student internships, participants should never be made to feel that they are in the same category as interns. Using a classification such as “fellow,” “returner,” or “relauncher” makes a big difference in terms of optics and increases the odds



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that participants will immediately be treated as members of the team.

Use cohorts. A strength of most returnship programs is the opportunity for participants to be part of a group that is going through the training and experiencing the readjustment to a work environment together. From the company's standpoint, cohorts make training easier and more efficient. And participants report that being part of a cohort is the best aspect of their return-to-work program. Having one another to share resources, ask questions, and get reassurance significantly eases the transition and creates bonds that may last for years. Additionally, the cohort members have an instant network of contacts within the organization. One difficulty with this structure is that managers must coordinate start dates for "their" participants with the start date of the cohort, which may fall at a less than optimal time for a manager's business unit—especially if the program is offered only once or twice a year. Starting cohorts more frequently can solve this problem, affording managers greater timing flexibility.

Give the program a name and a website. Phil Anderson, who created return-to-work programs at Moody's and the Depository Trust & Clearing Corporation, says that branding is important. (Disclosure: Anderson is on the board of my company.) "Name the program—it makes it real," he says. Giving it a dedicated landing page on the company website creates visibility and a focal point for program activity. (For examples of well-done landing pages, see those of Merck, Oracle, Johnson & Johnson, IBM, Morgan Stanley,

Facebook, Credit Suisse, and Raytheon Technologies.)

Use the program to engage with company alumni. Some companies refer to high-performing employees who left for a career break as "regrettable losses." Most lose track of them after they leave. But some, such as consulting firms, systematically track departing employees, partly because they may be potential clients. (See "Turn Departing Employees into Loyal Alumni," HBR, March–April 2021.) Companies should target their alumni for participation in their return-to-work programs, because they are already known internally, they understand company culture, and they may be more inclined to come back to a familiar place than to look elsewhere. Make sure your company identifies in exit interviews who is taking a career break and tracks that person carefully so that employer and employee will be top of mind to each other when the former employee wants to return to work.

Leverage employee referrals. A strong internal campaign to educate employees about the program can create word of mouth and drive referrals, which are often the top source of candidates. Some companies include return-to-work referrals in their paid referral programs. Current employees who relaunched and people with a personal connection to someone who did so can be critical allies (as well as managers, speakers, and mentors) for a program.

Highlight success stories. Relaunchers at the most senior levels, inside and outside a company, can provide powerful examples of career paths following a break. Jacqueline Welch, the CHRO of the New York Times

Company, is a relauncher, having taken four years off earlier in her career, and she regularly talks about her nonlinear career path. (Disclosure: Welch is on the board of my company.) Similarly, Annette Rippert, a mother of five who took an eight-year break from Accenture, returned in 2012 and is now group chief executive for Accenture's strategy and consulting business. She tells her story when promoting Accenture's return-to-work program.

THE GLOBAL PANDEMIC has changed perceptions about the way people work. Managers have come to recognize that working remotely can be more productive than working in an office. Companies that would not have considered recruiting, hiring, and onboarding an employee without an in-person meeting had to immediately start doing just that—and many will continue to do so. Companies should reexamine their attitudes toward relaunchers as well. Return-to-work programs provide access to a high-quality, diverse talent pool while simultaneously signaling to current employees and alumni that their company is forward-thinking and employee-centric. These programs have grown dramatically over the past 20 years, and many more companies can benefit from launching one. 

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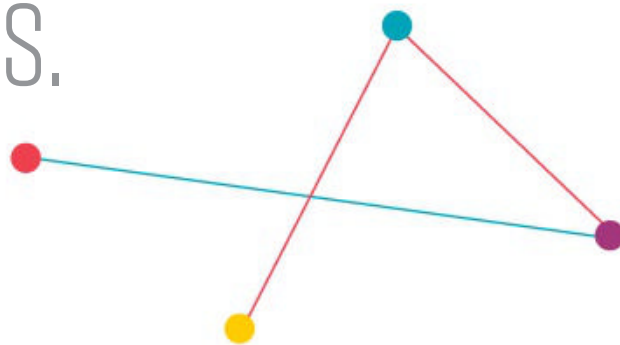


Elevate Employees, Don't Eliminate Them

Unlock value by connecting them with customers.



Ryan W. Buell
Professor, Harvard
Business School



A **TRAUMATIC DISCONTINUITY** like the Covid-19 pandemic presents an opportunity to reconnect on fresh terms—with families, friends, coworkers, and even ourselves. For businesses this moment provides a chance to reimagine the role employees play in customer service. Even before the pandemic, technology was increasingly making it possible for employers to automate interactions with customers; thus many managers will instinctively look for ways to eliminate jobs. Indeed, the last major global shock—the 2008 recession—led to what economists call a “jobless recovery,” as companies found that they could get by with fewer employees.



Simply the knowledge that an employee is readily available and willing to help can increase customer confidence, satisfaction, trust, and long-term loyalty.

Taking that approach now would be a mistake. To be sure, some efficiencies will lead to the elimination of certain roles. But most managers should focus on elevating employees, not eliminating them—on changing their jobs to unlock more value by allowing them to have deeper and more-meaningful connections with customers in the moments that count.

In an article titled “Operational Transparency” (HBR, March–April 2019), I explained how showing the work that employees do for customers can lead to higher customer satisfaction, loyalty, and willingness to pay. The fundamental driver of this effect is the power of connection. When customers see how employees are working to solve their problems, they place greater value on that work.

From this insight and related research, I have developed a post-pandemic playbook for employers centered on five key pieces of advice:

- Create the conditions for employees to connect with customers when it matters most.
- Help employees make more of these meaningful connections by shifting the boundaries of their work.
- Find ways for customers to lend a hand, which they will gladly do if employees have created a meaningful connection with them. That will lead to further efficiencies.
- Ensure that employees can see the impact of their work on the lives of their customers, which will make their work more rewarding and engaging.
- Invest some of the value created by employees’ redesigned roles in increased compensation and improved

scheduling—which can make their jobs more sustainable and realize further value.

The most obvious application of this playbook is in sectors where interactions between customers and employees are routine. But recent experience reveals that the potential for employees to foster connections with customers is far greater than we might have imagined. For example, during the pandemic many people came to know the mail carriers and sanitation workers who served their homes, just as they had previously done with hairdressers, bartenders, baristas, and other service workers. Indeed, in sectors where interactions have historically been the most transactional, the gains for organizations that enable their employees to connect when it counts stand to be especially dramatic.

Connecting When It Counts

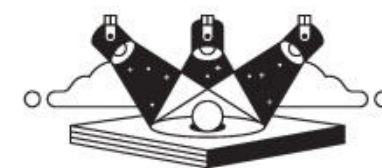
When people perceive that a lot is riding on an interaction—that their physical, emotional, social, psychological, or economic well-being may be at risk in some way—it is a moment of truth for the organization, because the experiences customers have will define or redefine how they perceive it and engage with it going forward. Leaving customers to fend for themselves can make them less confident in their choices, less trusting of the company overall, and less likely to remain loyal. When employees are well positioned to respond to customers’ emergent needs, they can create breakthrough value by reframing the service their employer provides and differentiating the business from its competitors.

This effect is so powerful that customers need not necessarily even engage with an employee for benefits to arise. Simply the knowledge that someone is readily available and willing to help can make a profound difference, increasing customer confidence, satisfaction, trust, and long-term loyalty. For example, in one field experiment I conducted with Michelle Shell of Boston University, customers who applied for a loan and proactively received a text from their loan officer with an invitation to phone if they had any questions were 16% more likely to move forward with the loan (if approved) than customers who received no such invitation—even if they never actually accepted it.

Service is the business of people helping people, and people are born with the tools to help one another. Empathy enables us to understand how others are feeling and tailor our responses accordingly. Indeed, many organizations screen job candidates for empathy, attention to detail, and service-mindedness. Yet after people with these qualities are hired, the design of their jobs may prevent them from doing what they would otherwise do well naturally. They may lack the time, the resources, the motivation, or the discretion to make connections. Addressing those problems can unlock considerable value for customers, companies, and even employees themselves.

Shifting the Boundaries of the Job

How can leaders create the conditions for more-meaningful connections? Paradoxically, the best place to start is



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precisely at the point where technology or some other intervention could take over an activity. Instead of asking, Can I eliminate this employee?, ask, Can I tailor this job to eliminate routinized, dead-end encounters with customers and allow the employee to respond fluidly to their needs while developing a bond with them, however briefly?

For example, Amazon Go opened its first full-scale supermarket in Seattle—after nearly 10 years of incubating and piloting the concept in smaller formats—just as the pandemic was taking hold. At the store visual-imaging technology tracks items as they’re taken from shelves, so customers can bag as they shop and walk out when they’re finished; their accounts are charged automatically. The most visibly laborious part of shopping excursions—checkout—has been automated away.

Yet Amazon Go still relies quite heavily on employees. They’re just not behind a cash register. They’re out on the floor, available to assist shoppers and chip away at a perennial pain point in grocery stores: finding what the customer seeks. Clad in bright orange uniforms, employees restock shelves and tidy displays while explaining the store’s technology to shoppers and offering guidance about products.

As people learn how to shop in Amazon Go stores, and as Amazon figures out how to automate restocking, the company may move to a lighter staffing model. But an alternative and differentiating path would be to elevate the employees, enabling those in particular departments to create even more value for customers by accumulating specialized product knowledge and taking

on an increasingly consultative and relational role. Honing their expertise through customer interactions, domain specialists might, for example, be able to share advice about wine pairings or recommend popular and nutritious school-lunch items for fifth-graders. Perhaps Amazon could support these elevated employees by connecting them with its recommendation engine or arming them with the technology to help customers place Prime delivery orders of items not carried in the store—above-and-beyond experiences that would play to the company’s strengths.

Giving employees time and space to double down on the tasks humans are best equipped to handle—connecting with other humans, using empathy to understand problems and ingenuity to solve them—could enable them to create considerably more value than they did in their original roles. If their jobs become more relational, employees will need training and systems to support their development, resources and discretion to facilitate graceful responses to unanticipated customer queries, and a means to channel ideas and feedback to leadership about how to enhance their roles and the company’s offerings even further.

There are other ways to help employees connect in the moments that count. In some cases cross-training can create slack by enabling coworkers to cover one another on routine assignments when customers require attention. In other cases work can be shifted to supply chain partners, as when manufacturers apply price tags to products or distributors place inventory on the selling floor. To be sure, leading companies have long prioritized frontline encounters. But the

constraints imposed by the pandemic have forced us to question conventional wisdom about how work is best accomplished.

Sometimes, through a thoughtful redesign, tasks can be eliminated altogether. The company Getaway, which rents out tiny cabins in the woods, has done away with many fixtures of the traditional hospitality business: It has no front desk, no concierge, no turn-down service, no room service, and no house-keeping during the guests’ stay. The model is designed to let people feel that they’re walking into their own cabin in the woods. When they arrive, they use a key code to access a meticulously clean space. A “cabinkeeper” will have left a handwritten, personalized note, along with a “s’more kit” or some other amenity, to make guests feel welcome.

Getaway aims to minimize customer-employee interactions so that guests can share meaningful moments with each other and unplug in nature. However, every cabin has a landline for reaching staffers immediately with questions or if help is needed. The company’s customer service model treats each guest like a dear friend staying in a private home. Team members use guests’ first names, make things happen quickly, and add a personal touch whenever possible. Stripping away unnecessary tasks allows Getaway employees to create an emotional connection with guests when doing so really matters.

Letting Customers Lend a Hand

My research has found that giving employees the ability to respond fluidly to customer needs can increase trust in



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an organization and deepen customers' relationships with it. And when the effort employees are making to help is visible, customers appreciate and value their service more and often feel an urge to reciprocate. Indeed, they will take on some of the work themselves as long as three conditions are met: They know *how* they can help; they are *able* to help, and they believe that their helping is *important*.

This insight does not give license to dump work on customers. Rather, it's about recognizing the human capacity and desire to be helpful in contributing to shared goals. Moving away from the default assumption of zero engagement by the customer can have a dramatically positive effect. At Getaway, for example, the cards on which cabinkeepers write their personalized notes have a line at the bottom that says, "You'd make our day by doing your dishes or tidying up before you go." The majority of Getaway's guests clean up after themselves, making it easier for cabinkeepers to excel in their roles.

In another example, when the city of Boston began showing residents images of the work its employees were doing to respond to their service requests (such as cleaning graffiti and fixing potholes), Ethan Porter of George Washington University, Michael Norton of Harvard Business School, and I found that those residents became more engaged with the city, submitting 60% more service requests. With more residents reporting problems, the city could allocate fewer workers to finding them and more workers to solving them.

Letting customers lend a hand isn't just more efficient; often it enhances

their experiences. We feel better about ourselves when we're able to contribute, and our contributions can serve as low-cost ways to customize service outcomes. Involving Boston residents in submitting service requests, for example, gave them a voice in which problems the city addressed first. A stake in the outcome can also increase investment in it. Research conducted by Michael Norton with Daniel Mochon of Tulane University and Dan Ariely of Duke University has shown that when customers lend their own efforts to a service outcome, they value it significantly more. The researchers named this phenomenon the IKEA effect, after the popular furniture retailer that leaves assembly to the customer.

For example, the company Zameer Kassam Fine Jewelry designs bespoke jewelry, two-thirds of which is engagement rings. The company employs a high-touch process through which employees learn the details of each couple's love story in order to create a one-of-a-kind piece just for them. Of course, any bespoke product requires intensive customer interaction, but Kassam and his team ask for a higher level of client participation than is typical in a luxury service experience. After completing an introductory call, a tutorial about diamonds, and an in-depth interview to learn the details of the couple's relationship, Kassam and his team of "storytellers" (client-facing representatives) have more than enough information to design the piece of jewelry. But they add a step—assigning the client "homework." For example, the client might be asked to find and share a text exchange from a pivotal moment

in the relationship or a photograph of a spoon that reminds the client's intended of her or his childhood.

The homework assignment is unique, chosen by the storyteller to help the designers better understand the central details of the couple's story, and often clients delight in spending hours on it. Their contributions inform each ring's design, but they also enhance the experience and investment in the ring itself, because the client played a role in its creation. Kassam believes that the homework assignment is critical to the company's collaborative process and helps motivate more than 90% of clients to move forward with their projects.

Demonstrating Employees' Impact

Elevating employees so that they can better connect with their customers gives them a clearer view of the impact their work is having. In our research my colleagues and I have found that this can make work feel more meaningful and appreciated, increasing satisfaction and engagement. However, enabling that view often requires deliberate action. For example, the final step in the Zameer Kassam Fine Jewelry process is the "private celebration." After a ring has been purchased and the question has been popped, Kassam's team invites the couple to come to the design studio together. The partner expects simply to meet the ring's designer. Kassam explains, "What they don't know is that we will surprise them with all the details of the process, including the notes of their love story that we've now rewritten



Letting customers lend a hand isn't just more efficient; often it enhances their experiences. We feel better about ourselves when we're able to contribute.

in our special way. I can guarantee you, most people have never heard the words their partner who loves them will say when they are not there. When we share these special words—often reciting quotes—it's the most beautiful, emotional moment. We are enabling love to the nth degree.”

Kassam's entire client-facing team attends these private celebrations. It's a chance for employees to reconnect around the organization's purpose and to experience firsthand the impact of the work they do. In addition to creating an extraordinary experience for clients, this peak event of every customer engagement provides joy and a sense of purpose for employees, filling them with even more enthusiasm and dedication for the next project.

Making the Work Sustainable

This playbook, centered on forging more-meaningful connections between customers and employees, can help organizations become more profitable through higher prices, better word of mouth, increased loyalty, further purchases and cross-selling, and sales growth. Some of that value should go toward making the roles of employees who are creating it sustainable.

Increasing compensation and improving scheduling are two levers that leaders can pull. This is not about accepting inflated overhead; it's about making an investment that will have a return. (The MIT professor Zeynep Ton has written in these pages about ways to improve the experience of frontline workers.) When employees are struggling financially, it can hinder their

ability to focus on their work. Research conducted by Anandi Mani of the University of Oxford, Sendhil Mullainathan of the University of Chicago, Eldar Shafir of Princeton University, and Jiaying Zhao of the University of British Columbia found that being preoccupied with financial concerns can reduce a person's cognitive capacity more than would going a full night without sleep. Work by Mullainathan, Supreet Kaur of Berkeley, Suanna Oh of the Paris School of Economics, and Frank Schilbach of MIT has found that when employees aren't worried about their finances, they are more productive and make fewer on-the-job mistakes. Providing sufficient pay and hours can free them to focus on their work.

Erratic schedules are another hidden drag on performance. At many companies schedules may fluctuate from week to week, changing on short notice and making it difficult for employees and their families to maintain healthy relationships and negotiate childcare, coursework, and other obligations outside the job. In a 35-week field experiment conducted in partnership with Gap in the United States, a team of researchers, including Saravanan Kesavan of the University of North Carolina, Susan Lambert of the University of Chicago, Joan Williams of the University of California, and Pradeep Pendem of the University of Oregon, found that sales increased 7% when employees were offered stable and predictable schedules. Analysis revealed that the effect was driven by better execution in the stores: Employees exerted more effort under the new schedules and had an easier time adhering to them. The

initiative, which included 28 stores, cost \$31,200 and brought in \$2.9 million in incremental sales.

Companies that reveal their sustainable employment practices to customers can reap additional rewards. In a recent field experiment, Basak Kalkanci of Georgia Tech and I partnered with Alta Gracia—an apparel manufacturer that pays a living wage to its workers in the Dominican Republic—and a U.S.-based retailer that sells Alta Gracia's products. We used video kiosks on the sales floor to show customers various messages about the company. Customers shopping during videos about Alta Gracia's living wage for its workers were 19% more likely to buy its products than customers shopping while a traditional marketing video was playing. Making the work sustainable can create more value for customers and employees while increasing the company's attractiveness to both groups.

HUMANS ARE SOCIAL animals. By driving us into isolation, the pandemic has reminded us of our hunger for meaningful human interaction. As this playbook makes clear, a single insight—that customers and employees should be able to engage like humans—holds tremendous value in the post-pandemic world. 

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“Given that the growing reliance on AI significantly increases the strategic risks businesses face, companies need to take an active role in writing a rulebook for algorithms.”

“AI REGULATION IS COMING,” PAGE 102



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INNOVATION



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PHOTOGRAPHER FLORIAN SOMMET

What *Evolution* Can Teach Us About *Innovation*

Lessons from the life sciences



IDEA IN BRIEF

THE CONVENTIONAL WISDOM

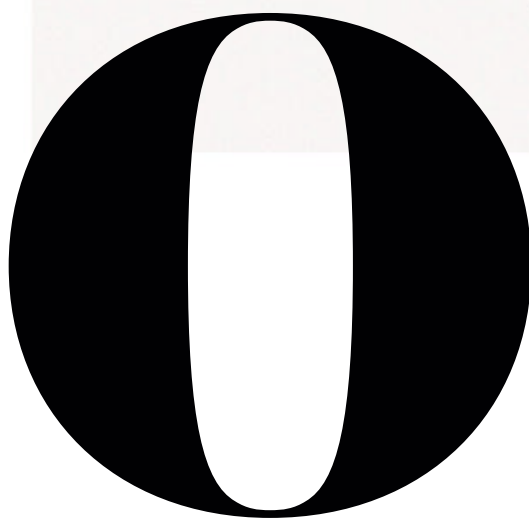
Many people believe that the process for achieving breakthrough innovations is chaotic, random, and unmanageable.

THE REALITY

Breakthroughs can be systematically generated using a process modeled on the principles that drive evolution in nature: variance generation, which creates a variety of life-forms; and selection pressure to select those that can best survive in a given environment.

THE PROCESS

Flagship Pioneering, the venture-creation firm behind Moderna Therapeutics, uses such an approach, which it calls emergent discovery. It involves prospecting for ideas in novel spaces; developing speculative conjectures; and relentlessly questioning hypotheses.



ON NOVEMBER 30, 2020, Moderna Therapeutics announced that Phase III clinical trials for its messenger RNA vaccine demonstrated 95% protective efficacy against the SARS-CoV-2 virus that had killed almost 1.5 million people worldwide in the previous 10 months. A relative upstart in the Covid-19 vaccine race and a company that few

people had heard of before the pandemic, Moderna looked to be an overnight success. But as its CEO, Stéphane Bancel, has noted, that success was 10 years in the making. Far from a one-and-done stroke of luck, the vaccine was the product of a repeatable process that has been used countless times by the company from which Moderna emerged: Flagship Pioneering, a venture-creation firm based in Cambridge, Massachusetts, whose mission is to conceive, make, and commercialize breakthrough innovations in previously unexplored domains of the life sciences.



ABOUT THE ART

Florian Sommet is a still life and beauty photographer living in Paris and Düsseldorf. His wife (and prop stylist), Jana, comes from a medical background, which influences their approach to nature and botanical photography.



INNOVATION

The misconception about the Moderna case, as with many other breakthrough innovations, is understandable. Breakthrough innovations are typically seen as the result of chaotic, random, and unmanageable efforts—the product of pure serendipity or the inspiration of a rare visionary. That view, we believe, is deeply flawed. From our different vantage points (Afeyan has spent the past three decades starting ventures based on breakthrough science and technology, and Pisano has studied innovation processes during the same period), we have come to realize that breakthroughs tend to emerge from a relatively well-defined process modeled on the basic principles that drive evolution in nature: *variance generation*, which creates a variety of life-forms, and *selection pressure* to select those that can best survive and reproduce in a given environment. The approach, called *emergent discovery*, is a structured and disciplined process of intellectual leaps, iterative search and experimentation, and selection. And while it relies on exceptionally talented people, it does not require the next Leonardo da Vinci or Steve Jobs to produce a breakthrough innovation.

Emergent discovery starts with prospecting for potentially important ideas in relatively novel scientific, technological, or market spaces with the goal of generating speculative conjectures, or “what if” questions. These serve as the starting point for an intensive Darwinian-style selection process to find and validate better ideas, soliciting critical feedback from outsiders to identify challenges and evolving the concept into a superior and practical solution. Emergent discovery requires a culture in which people, particularly leaders, in an organization are comfortable broaching seemingly infeasible ideas and challenging dogma—a culture that views “flawed” ideas not as dead ends but as building blocks and considers the evolution of ideas to be a collectively shared responsibility.

Defining Breakthrough Innovation

It’s important to define exactly what we mean by “breakthrough innovation.” We use two criteria. The first is *discontinuity*. Breakthroughs embody leaps in the principles of science, technology, design, economics, and other

knowledge domains and establish new paradigms for future innovation by changing what is expected or considered possible. Honda’s light-jet design was a breakthrough because it was the first to use an engine-over-the-wing configuration, which, until Honda did it, was considered aerodynamically infeasible on a small aircraft. Not all breakthroughs are purely scientific or technological, of course. Google’s search engine was a technological breakthrough, but the company’s cost-per-click pricing method led to a business model innovation that totally upended the economics of the advertising industry.

The second criterion is *value*. Breakthroughs generate new sources of value by solving important problems or creating demand that did not exist previously. Digital cameras may have killed the film photography business, but today vastly more photos are taken digitally than were ever taken with film. Furthermore, considering that digital images have become an integral part of social media platforms like Facebook and Instagram, digital photography has created tremendous economic value.

The Shots-on-Goal Fallacy

In striving for breakthrough innovation, the predominant strategy today is the “shots on goal” approach—the antithesis of emergent discovery. It entails funding a large portfolio of projects in the hope that the profits from the rare success will more than pay for the cost of the numerous failures. If you invest in enough projects, the theory goes, by the laws of probability (sheer luck) you eventually will “score.” This strategy is common in the life sciences, the tech sector, consumer packaged goods, entertainment, and venture capital. A key element of the approach is strict reviews that can kill what appear to be weak projects quickly. At first glance, that all seems reasonable. Modern financial portfolio theory and practice highlight the benefits of diversifying risks, and a system of strict reviews to ensure that you don’t throw good money after bad would appear to be prudent resource management.

But the shots-on-goal approach ignores the fact that breakthrough concepts are usually riddled with flaws at the outset. Indeed, previous iterations of many celebrated breakthroughs initially looked like duds. We hail the iPhone



as a game changer, but most of its predecessors—such as Apple’s Newton—failed. Crixivan represents a breakthrough AIDS drug, but its development program was nearly terminated when early clinical trials yielded disappointing results. Because the mantra of the shots-on-goal approach is to kill early and often, many promising ideas struggle to survive past the embryonic phase.

Another drawback is that the pressure for early results can create a dysfunctional adversarial relationship between project teams and their funders. Funders are eager to see progress, while team members live with the specter of having their projects canceled (with potentially dire consequences for their jobs or reputations) if initial results are poor. This dynamic can lead to situations where teams are reluctant to share bad news with funders—or to share information with other project teams whom they view as competitors for scarce resources. It also means that teams have little incentive to conduct the kind of early experiments that might illuminate important flaws in their concepts.

A superior approach is the emergent discovery process used by Flagship, which is modeled on the basic principles of evolution—the generation and selection of genetic variants—which have proved to be potent engines of innovation in nature. Genetic variance is generated by mutation (random point changes in the DNA code) and recombination (rearrangements of fragments of DNA). Selection pressure refers to elements of the environment—such as competition for food—that affect whether a given trait (say, longer legs) is more or less conducive to survival. Research on innovation and case studies on industries as diverse as chemicals, pharmaceuticals, computers, automobiles, electronics, and aircraft indicate that mechanisms analogous to variance generation and selection pressure play a critical role in innovation. If properly designed and managed, these processes can be harnessed to create breakthroughs. Flagship has developed and applied the principles of emergent discovery to originate more than 100 life science companies over the past two decades. A good case in point is Moderna Therapeutics. (Disclosure: Pisano has consulted to and has a financial interest in Moderna and is on the boards of and has financial interests in two other Flagship-backed firms, Axcella Health and Generate Biomedicines).

A Product of Emergent Discovery: Moderna

Moderna had its origins long before the pandemic. In the spring of 2010, one of us (Afeyan) and MIT’s Robert Langer, a prolific inventor and chemical engineering professor, met to discuss some ideas that Harvard’s Derrick Rossi had been researching about using mRNA—molecules that ferry DNA’s instructions to a cell’s protein-making machinery—to reprogram a certain kind of cell (fibroblasts) to create stem cells that could then be manipulated into many other kinds of cells. Rossi’s research built upon previous work by the University of Pennsylvania’s Katalin Karikó and Drew Weissman, who had used chemically modified mRNA to reduce—but not eliminate—adverse innate immune reactions in animals. In discussions with Langer, Afeyan found the general approach intriguing, but not because of the potential to reprogram adult cells into embryonic-like stem cells. Instead, he wondered whether it might be possible to use mRNA to instruct cells to make drugs—an idea that had been around for decades but had yet to be turned into a reality.

On the basis of this and other discussions, Afeyan and Doug Cole, a managing partner at Flagship, launched a seven-month exploration inside Flagship Labs, the firm’s innovation foundry, to explore the question: “What if we could create engineered mRNA that, when introduced into patients, would turn their own cells into miniature factories that make any biotherapeutic drug we want?” No one had ever successfully engineered mRNA for use as a medicine or proved that it could be done. Afeyan and Cole discussed the idea’s feasibility with scientists from a variety of disciplines, ranging from molecular and cell biology to biological engineering and nanotechnology. They then hired two young researchers from the lab of Nobel laureate Jack Szostak, a pioneer in RNA biology, to tackle the question: “Could mRNA enable patients to make their own therapeutics?”

Exploration of this question generated dozens more puzzles. Previous in vitro lab studies had shown success in reducing innate immune responses to synthetic mRNA, but even after chemical modifications, when the mRNA was put into cells, it triggered immune reactions that were still too high to allow its use in animals or for repeat doses. The



There was no “aha” moment when the mRNA breakthrough happened. The Moderna platform was built on a constellation of technologies, methods, and know-how that evolved over time.

specific biochemical pathways responsible for the immune reactions had not been identified. The team wondered whether different chemical modifications would lead to less-intense innate immune responses. Questions related to stability also came up. mRNA molecules are intrinsically unstable and prone to degradation in the bloodstream. Previous research with other types of RNA had discovered chemical modifications that rendered them more stable. Could mRNA be modified in the same way? (No, it turned out. Unlike the other RNAs, mRNA molecules had to survive two processes—transcription and translation—and the modifications interfered with both.) What alternative modifications might work? Again, there was no animal data on this and other questions. No one, for instance, knew where the mRNA actually went after injection into an animal. No one knew whether the synthetic mRNA would resist degradation or if it did, whether you could get enough of it into cells to manufacture protein. Assuming you could deliver sufficient quantities to the cells to spur production, no one knew whether the proteins would correctly “fold” into the three-dimensional shapes necessary for proper functioning. And assuming that functional proteins could be made, it was far from certain whether therapeutically meaningful quantities could be produced. Not only had these questions never been researched but the tools to address them had not even been created.

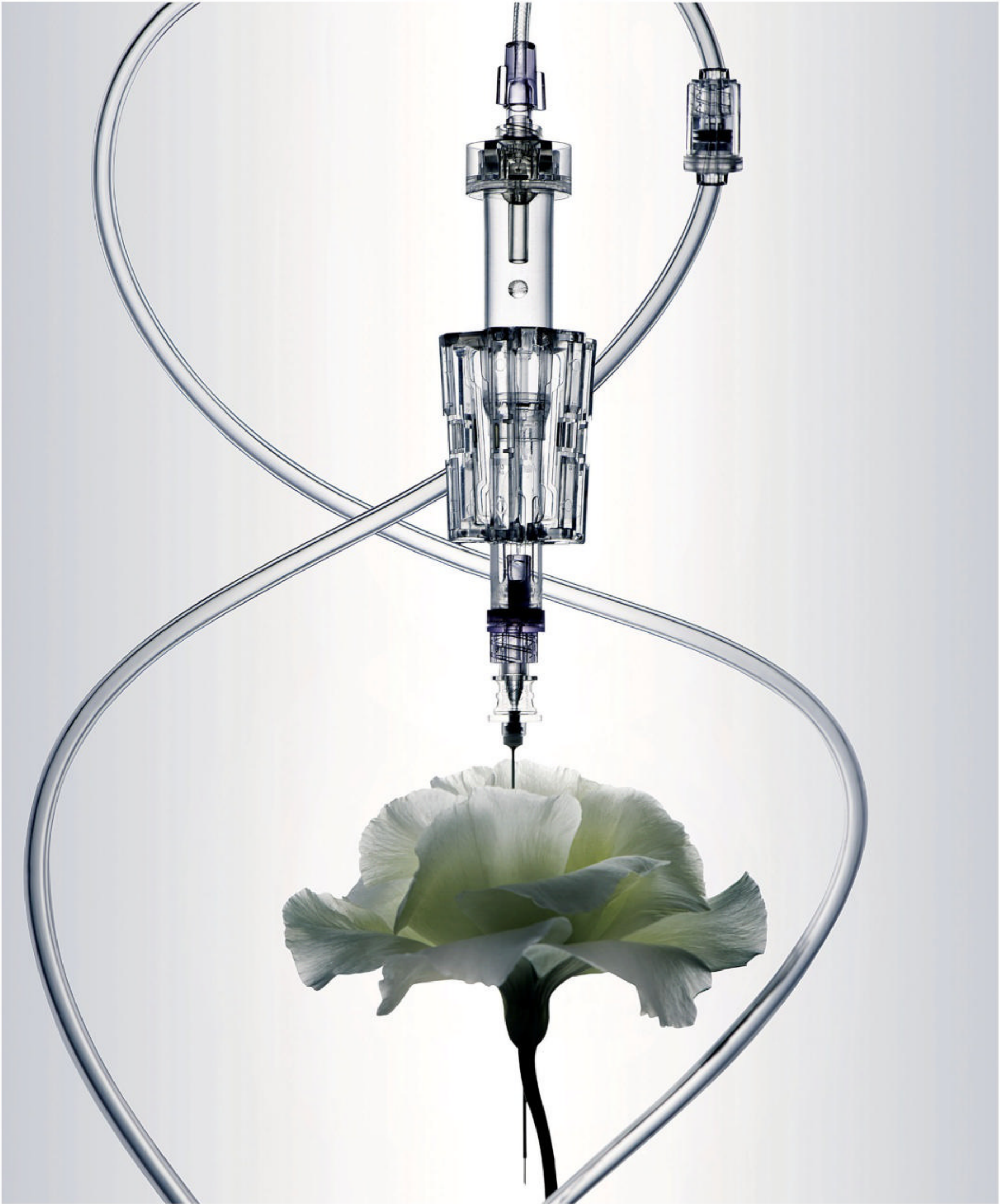
Several months in, the team had many hard questions and few answers. Project team members at ProtoCo LS18, as the prototype company was called, believed that there would be enormous commercial value if they could answer those questions. And with so little previous research in the area, many of their advances would be patentable. In the fall of 2010, Flagship began filing patents covering new chemical modifications as well as therapeutic compositions of mRNA. In 2011, the initiative was renamed Moderna, and its scientists moved into a lab on First Street in Cambridge. The team spent the next six months injecting mice with various combinations of chemically modified mRNA. Not unexpectedly, many of the molecules didn’t survive transcription and translation. But a few did. Some of the mice started producing proteins that they wouldn’t otherwise have made—first in tiny amounts and then in larger ones. That was the first real proof of scientific feasibility.

The story of Moderna illuminates several salient aspects of the breakthrough process. First, breakthroughs emerge from the accumulation of numerous advances—some big and many small. There was no precise “aha” moment when the mRNA breakthrough happened. In fact, there was no single mRNA breakthrough: The Moderna mRNA platform was built on a constellation of technologies, methods, techniques, and know-how that evolved over time. For instance, the team realized early on that because the immune system saw the injected mRNA as foreign and hostile, it attacked the molecules and shut down production of the desired proteins. Solving this problem—which involved developing proprietary ways to package mRNA so that it could evade the immune system and deliver it to the right cells in the body—took years.

Second, breakthroughs do not require an initial focus on a specific problem or user need. Flagship’s research started with speculation around a very broad use case: Could mRNA be used as a new drug modality? But there was no particular disease to be cured or user need to be addressed. Although Moderna is best known these days for its Covid-19 vaccine, infectious-disease vaccines were not a major part of the company’s early thinking; nor were cancer therapies or other types of vaccines, which now constitute another major thrust of the company. The search for practical applications coevolved with the deeper understanding of the technology.

Finally, breakthroughs originate with highly speculative, even seemingly unreasonable conjectures. The question “What if messenger RNA could be a drug?” was purely hypothetical in 2010. (As late as the summer of 2020, many experts were skeptical that mRNA-based vaccines against Covid were feasible.) But that was the point. The sole purpose of the what-if question was to frame and aim the exploration. It did not have to be right to be successful. In fact, many initial conjectures about mRNA proved to be wrong, but other important insights were generated along the way. Although no one could predict where the exploration would lead, the process was neither random nor chaotic. The concept evolved and the solution emerged through a highly structured set of activities involving variance generation and selection pressure.

Let’s examine those two elements of the emergent discovery process in greater depth.



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Variance Generation: Initiating a “What If?” Hypothesis

With innovation, variance generation is not spontaneous, as it is in the natural world. It must be instigated by people looking for new ways to do things or seeking new understanding. But most of the time, innovation teams limit their thinking to tweaks and refinements of ideas that are known to work. For instance, ideas for making cars more fuel-efficient and less damaging to the environment for many decades consisted of incremental improvements in engine design (adding turbochargers; using electronics to more precisely control combustion), making vehicles lighter, and adding devices such as catalytic converters. All these improvements were predicated on the internal combustion engine as a starting point. Breakthrough innovation requires contemplation of alternatives beyond current scientific, technological, design, or economic horizons. Not until lithium-ion batteries became adequately efficient—thanks to advances generated in the portable electronics business—did electrically powered vehicles become feasible. Such leaps do not come naturally. Indeed, cognitive biases, misaligned incentives, adherence to dogma, and other forces often hinder speculation. Processes are needed to help us overcome these barriers.

Flagship’s variance generation process, which is designed to create breakthroughs in previously unexplored domains, explicitly excludes areas of science in which other companies have already been founded or where prior research is extensive. Small interdisciplinary teams of Flagship’s scientists and senior leaders (all of whom have science backgrounds) are assigned to explore specific domains (say, the application of artificial intelligence to drug discovery). Because the exploration teams are working in areas where little previous scientific work has been done, they cannot follow the typical process of reading the literature, identifying the gaps, and then tackling those gaps. Instead, they start by asking a series of what-if questions derived through rigorous exploration of various strands of science.

For instance, we know that the human body contains or, through consumption of food, interacts with many different forms of life: animal cells, fungi, bacteria, plants, viruses, and other single-cell organisms. That fact might lead one to ask questions such as: What do all these life-forms do in our bodies, and how do they interact with one another? Is there molecular communication across these life-forms? Do bacteria in our bodies work with our own cells to carry out metabolic, immunologic, and even neural functions? (It turns out that the answer to all those questions is yes.) Those in turn lead to speculative conjectures: What if we could develop medicines that utilized these networks to improve our health? What-if questions like that were the



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foundation of Flagship’s Senda Biosciences, a venture focused on health care applications of intersystem biology.

Although they are speculative, good what-if questions are grounded in deep understanding of biological phenomena. (For instance, the human ecosystem contains many life-forms; messenger RNA plays a critical role in the production of proteins inside cells.) They are derived by rigorously probing what is known and unknown about specific biological systems. For example, starting in 2014 a Flagship team launched an exploration of ways to use human red blood cells as therapeutic agents. At that time, other scientists had been developing engineered T cells as a new modality to fight cancer. This led the team to ask, “What if we could produce engineered red blood cells (the most abundant cell type in the body) containing one or more therapeutically active proteins either inside or on their surface as a new type of medicine?” At the time, there was no data suggesting that such cells could be made or that they would be functional. The venture, ProtoCo LS24, later became Rubius Therapeutics.

The variance generation process also requires robust interdisciplinary collaboration. Flagship’s ventures might bring together, say, a chemical engineer, a computational biologist, a cell biologist, and an oncologist—a range of perspectives that is itself a source of variance generation. Research has established that well-functioning interdisciplinary teams expand the scope of exploration by combining previously disparate domains of knowledge.

Asking what-if questions is a technique as old as Aristotle, yet this seemingly simple creative tool is often quite hard to use in practice. In our experience, three things get in the way.

Mistake #1: The hypothesis must be quickly proved correct. Innovation teams are often under pressure to validate their hypotheses early on. But doing so creates an “intellectual gravitational pull”—a bias against venturing too far from your known knowledge base. The what-if question should be a purely speculative starting point—a conjecture that becomes the focus of intensive iterative experimentation, testing, reevaluation, and evolution. At Flagship, there is explicit acknowledgment that these hypotheses need not be true at the moment they are posed. Everyone assumes that they have flaws; after all, when working in uncharted territory, it is virtually impossible for your initial supposition to be 100% correct.



Unless the team discovers a fatal flaw in the core hypothesis, it continues to evolve the idea, asking, “What did we miss? What should we change? What’s the next experiment?”

Mistake #2: The what-if question must address a specific problem. Problem-driven discovery—which has been used very successfully by organizations such as the U.S. Defense Advanced Research Projects Agency (DARPA)—starts with a target problem to be solved (say, how to design a hypersonic aircraft capable of flying 20 times the speed of sound). DARPA’s track record demonstrates that this approach can be effective. Flagship’s own successful track record, however, suggests that a narrow focus on a specific problem is not necessary for breakthrough innovation—and that under some circumstances, *not* having one leads to more creativity. In the early phases of exploration, Flagship considers broad potential realms of applications or use cases rather than specific problems or markets. For example, the process of exploration for another of Flagship’s ventures, Generate Biomedicines, was not motivated by a desire to treat a particular disease; rather, it started as an investigation into whether artificial intelligence could be used to expand the arsenal of possible biologic medicines. This led to the development of a computational platform capable of generating completely novel biotherapeutic proteins.

Neither approach is better than the other, but each is suited to different types of organizations and strategies. DARPA, because of its institutional mission, confronts a very specific set of military problems it seeks to solve. Thus, its problem-driven approach fits its strategy. But organizations seeking breakthrough innovation in unexplored realms need much more freedom for initial inquiry and an expanded scope of exploration. In fact, by starting with hypotheses about solutions and problems, an exploration can toggle between the two to find novel matches.

Mistake #3: The hypothesis may be fuzzy and imprecise. Hypotheses should not be amorphous visions; they should be concrete assertions of how something might be done. Just because they are speculative doesn’t mean they can be vague or thin on specifics. This may seem counter-intuitive. After all, why sweat the details at an early stage, when it is highly likely that a proposed solution won’t turn out to be correct? Details are important because they provide a focal point for subsequent inquiry, testing, and evolution. Without them, it is hard to know what questions to ask next and which experiments might be critical to run. Consider the difference between the following two hypotheticals:

“What if we could create a car that is self-driving?” as opposed to “What if we could create a fully autonomous driving system using a 360-degree suite of lidar sensors; infrared and ultrasonic sensors; cameras mounted on the front, rear, and sides of the vehicle; an on-board computer capable of 30 trillion floating point operations per second; artificial intelligence; GPS accurate to within one meter; and real-time vehicle-to-vehicle telemetry?” It is hard to know how to react to the first question other than to say something (not particularly helpful) like “Wow, sounds cool.” The second, concrete proposal invites a host of questions such as “Is 30 trillion floating point operations per second enough?” and “What kind of vehicle telemetry is needed?” Obviously, at the very outset of an exploration, one is unlikely to know enough to formulate a very precise hypothesis, but getting to such hypotheses as quickly as possible should be the goal. Think about hypotheses (Flagship often seeds a space with more than one) as alternative destinations. If you are not clear about where you want to reach eventually, then it is hard to choose a direction—and impossible to know if you are making progress.

Selection Pressure: Getting to “It Turns Out That”

In nature, variation is just the first step in evolution. Selection pressure through competition for resources (say, food) shapes which genetic variations (longer beaks, for example) survive and which do not. Applying selection pressure in the realm of innovation results in relentlessly questioning and refining hypotheses. This can be done by a variety of means, including gathering and analyzing data, formal experimentation, and soliciting outside experts’ input and critiques. Flagship uses all those means. It presents its hypotheses to a broad network of scientists, knowing full well that many will be skeptical and recognizing that even the most skeptical among them (the one who says, “That idea will never work”) will have valuable insights to help evolve the ideas. Through these discussions, Flagship’s team members learn about prior science that may be relevant and about people who may have helpful experience.

If selection pressure is working, flaws in the initial hypotheses will surface. In some instances, the flaws may



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be so deep that they warrant abandoning or rethinking the basic concept. Early on, “killer experiments” are conducted to determine whether an idea faces an impenetrable roadblock. For instance, in the early days of Moderna’s research program, experiments were aimed at better understanding the immunogenic properties of mRNA and whether an immune response could be avoided—because if it couldn’t, the idea of using mRNA as a drug would be dead.

In many cases, even a “failed” experiment provides a jumping-off point for further inquiry or development of alternative hypotheses. With each iteration, hypotheses are discarded, confirmed, or refined, and core ideas about what’s possible and useful evolve until an actionable invention is created. Flagship refers to this as the moment when the what-if question is transformed into an “it turns out that” statement.

A key element of selection pressure involves the integration of diverse concepts. Flagship will often conduct parallel efforts to explore a given issue (say, using artificial intelligence to discover novel drugs). The point of parallel efforts is not to foster internal competition that results in killing the “loser” (as is often done in larger enterprises); rather, it is to expand learning and to find paths forward. In some cases when there are two or more parallel efforts, each may have a piece of the puzzle but not the whole thing, and the two would be better off merged. For instance, Flagship launched two efforts in 2013 to explore whether there are strains of bacteria in our guts that can control immune cells—to either activate immune responses or suppress them. The two developed their own research approaches and generated proofs of concept that such bacteria were present and, if developed into monoclonal strains, could be potent immune modulators. The decision to combine the efforts and develop a common platform to discover and produce new oral medicines resulted in Flagship’s Evelo Biosciences.

This approach to experimentation is different from the one employed by many organizations, including venture capital firms and funding agencies. Experiments are commonly used as filtering tools in a shots-on-goal approach to innovation. In the emergent discovery process, experiments are tools of inquiry, designed to find paths forward. When an experiment fails to support a hypothesis, project team members are expected to search for the root causes in order

to expand understanding. Unless the team discovers a fatal flaw in the core hypothesis, it continues to evolve the idea, asking, “What did we miss? What is an alternative approach? What should we change? What’s the next experiment?”

For instance, in the early days of the venture that became Axcella Health, the Flagship team focused on producing recombinant proteins for therapeutic benefit composed of amino acids commonly found in the human body. While this was theoretically possible, it turned out to be extraordinarily difficult to manufacture the proteins in the required quantities, at the necessary level of purity, and at a reasonable cost. But that roadblock led to another insight: Why not use carefully designed combinations of the amino acids themselves (which are readily available) as components of the drugs rather than trying to produce a protein that contained them? Further experiments validated this new idea and provided a development path even faster than anticipated under the original approach.

Emergent discovery may sound highly risky and expensive. But iterative processes—if properly designed and managed—can actually be quite efficient. The key is to make each iteration as cheap and fast as possible, rather than going all in on hypotheses. Flagship intentionally keeps the earliest phases of exploration and experimental testing as lean as possible. The goal is to establish feasibility of an idea with an investment of no more than \$1 million to \$2 million over six to 12 months. Only after this phase has demonstrated a reasonable path forward will a company be formed and larger capital investments made. The objective of this iterative process is to maximize the “learn-to-burn ratio”—that is, to generate the maximum insight from each dollar spent.

Fostering an Emergent Discovery Culture

A disciplined and well-defined process is only part of what it takes to practice emergent discovery. Equally important is having the right mindset, culture, and leadership behaviors. Here are three of the most critical:

Make it acceptable to broach the unreasonable.

Almost by definition, breakthroughs in their embryonic stages defy existing theories, principles, and bounds of



INNOVATION



FURTHER READING

For more on innovation, see these articles on HBR.org.

“The Edison of Medicine”
by Steven Prokesch (HBR, March–April 2017)

“Special Forces’ Innovation: How DARPA Attacks Problems”
by Regina E. Dugan and Kaigham J. Gabriel (HBR, October 2013)

“The Hard Truth About Innovative Cultures”
by Gary P. Pisano (HBR, January–February 2019)

“Funding Eureka!”
by Nathan Myhrvold (HBR, March 2010)

experience. As such, they should be considered leaps of faith. So to foster emergent discovery in your organization, you need to make it acceptable to consider the seemingly impossible. Early in the process, leaders and team members must be willing to suspend disbelief and to reserve judgment about whether a hypothesis is true or not. Common (and very reasonable) questions such as “Why do you believe that’s true?” and “How do you know that’s the right thing to do?” tend to shut down the process of inquiry. Instead, ask questions like “What experiment could you run to test that hypothesis?” and “If your hypothesis is correct, what are some possible use cases where we might create value?” The way leaders react to early hypotheses heavily influences whether the most creative ideas are snuffed out or have a chance to evolve into something impactful.

Leverage your critics’ insights to make your ideas even better. Breakthrough innovations typically challenge prevailing dogma—the set of collectively held beliefs about what is possible and what is acceptable. Challenging dogma also means challenging the people (the “leading authorities”) who have built their reputations around its veracity. History tells us that people who challenge conventional wisdom are often subject to accusations of recklessness, incompetence, or worse.

Leaders must make it acceptable to defy dogma. Consider the common practice of engaging external experts to vet internally generated ideas or to perform due diligence on proposed investments. In principle, having such external input is a good idea. But too often, these experts become defenders of the conventional wisdom. A better approach is to use them to improve the ideas—by identifying a critical assumption that should be tested, for example. If we engage skeptics and can tolerate their sometimes scolding critiques, we can learn a lot about what we need to do to move our ideas forward.

Make it about ideas, not personal ownership. Emergent discovery explicitly recognizes that ideas are built over time with contributions from many people. One person’s ill-formed idea last month might be the essential building block for someone else’s advance this month. The two are equally important to the process. Pursuing emergent discovery in your organization requires a culture where ideas are not “owned” by individuals but are considered part of

the intellectual commons of the enterprise. Disconnecting ideas from people also means that a failed idea is not a personal failure. Accordingly, emergent discovery works better if the teams involved in an effort have shared incentives and rewards.

Leading Emergent Discovery

The notion that breakthrough innovation is a random, chaotic process largely dependent on the visionary powers of gifted geniuses makes many organizations hesitant to embrace it as a core element of strategy. That is unfortunate given the massive value that breakthroughs produce for society and the companies that create them. But there is nothing mysterious or magic about the process. Breakthrough innovation can emerge through a rigorous and disciplined process of intellectual leaps, iterative search, experimentation, and selection. Emergent discovery is a repeatable process that can be learned.

Mastering it, however, requires more than understanding the mechanics of the process. It requires an organization in which the people—particularly the leaders—adopt the right mindset and behaviors. They must be willing to consider seemingly unreasonable ideas and suspend judgment early in the discovery process. They must embrace learning through rigorous experimentation and failure and prioritize collective contributions over the personal ownership of ideas.

Ultimately, whether an organization adopts these habits depends critically on the behaviors of its leaders. Pursuing breakthrough innovation is as much a leadership challenge as it is a technical one. If the Covid-19 catastrophe has taught us anything, it is that the world can change dramatically in short order. Looking ahead, all companies must build the capacity to leap beyond existing comfort zones. Now, more than ever, we need leaders who can drive breakthrough innovation. 

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ARTIFICIAL INTELLIGENCE – THE SIXTH SENSE FOR SUPPLY CHAIN RISKS?

The supply chain disruption triggered by the COVID-19 pandemic caught almost everyone off-guard. Although most enterprises had some business continuity plans, many were half-baked and never quite battle-tested.

The lockdowns and restrictions on movement of goods and people had pushed already stressed supply chains beyond the breaking point. Lean supply chains that had helped optimize costs were hit the hardest. These enterprises had to scramble to reconfigure alternative supply chains and stay operational.

For most enterprises, the rebuilding continues. The next year is expected to be a pivotal one for global supply chains as they transition from being “cost-efficient” to being “efficiently flexible.”

As enterprises focus on building more agile and resilient supply chains, the just-in-time philosophy is yielding to a just-in-case mindset. While the pandemic isn't yet in the rearview mirror, enterprises recognize they need a risk management overhaul to weather the next disruption.

**AI CAN HELP YOU
SENSE, QUANTIFY
AND VISUALIZE
SUPPLY CHAIN RISKS**

Enterprises face several challenges as they reconstruct their supply chains to mitigate risk. First, the risk signals are often weak and widely dispersed. That's where AI comes in — it can help decipher these shaky signals across your supply chain. AI can process vast amounts of data and understand patterns quickly and effectively. Think of it as a sixth sense, except it's based on real data and AI-based predictive analytics — not a hunch.

Another challenge is that enterprises do not have a quantified view of their supply chains' risk exposure. Risks vary for every company and industry. An AI-based digital supply chain “control tower” can help quantify and visualize these risks based on real-time data from multiple internal and external sources.

Last, but certainly not the least: Intelligence is only useful if it's reliable and gets to the right people at the right time to enable effective decisions and actions. To address the problem of stale and inaccurate data, revisit and refine your governance model. Information needs to flow efficiently to enable swift corrective action to mitigate potential risks before they become full-blown disruptions.

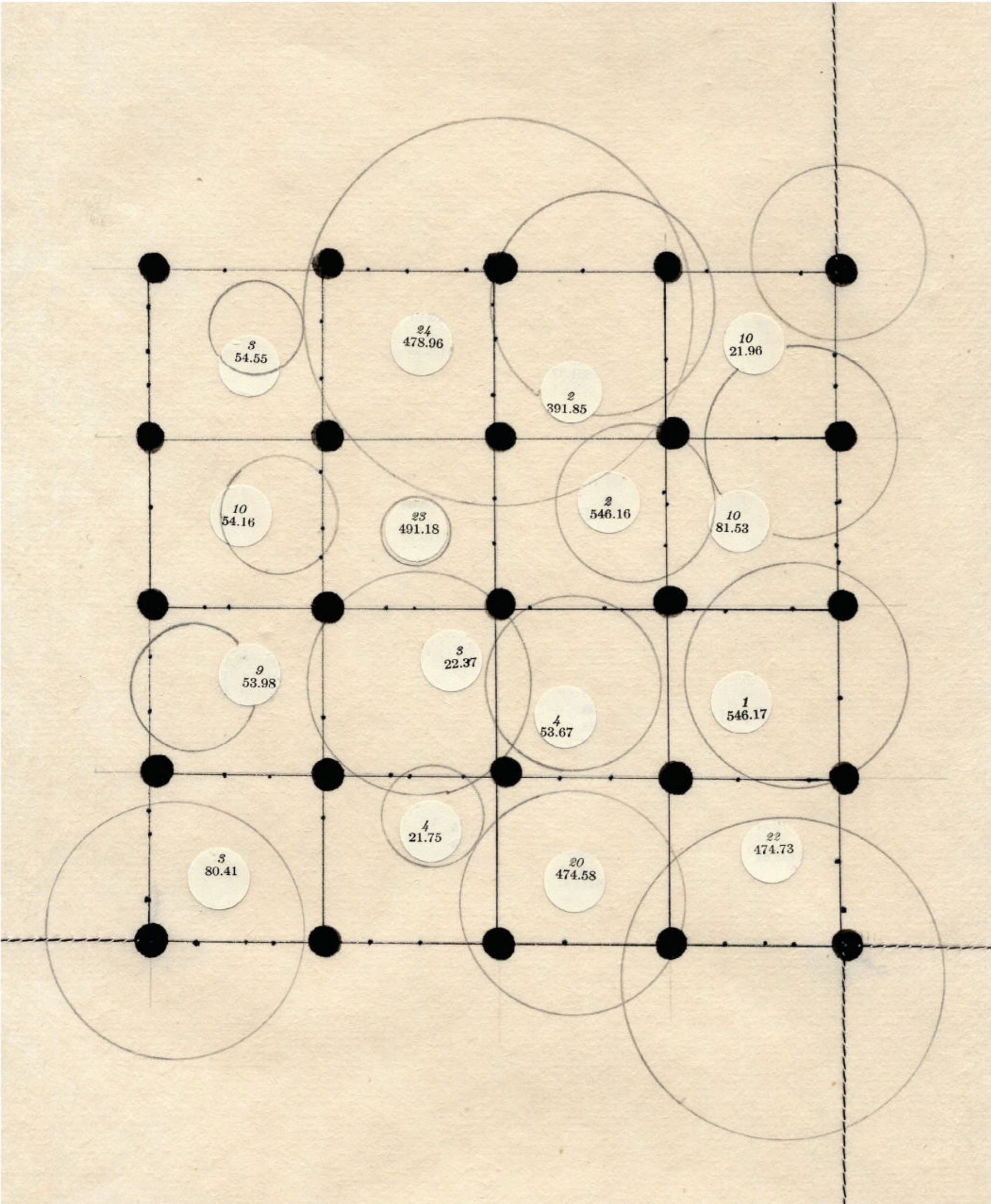


PRAMOD GUPTA is vice president of consulting at GEP, a global leader in digital supply chain and procurement transformation.

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PRICING

The *Pitfalls* of Pricing Algorithms

Be mindful of how they
can hurt your brand.



ILLUSTRATOR
TSILLI PINES

WHAT IS AVAXHOME?

AVAXHOME-

the biggest Internet portal,
providing you various content:
brand new books, trending movies,
fresh magazines, hot games,
recent software, latest music releases.

Unlimited satisfaction one low price

Cheap constant access to piping hot media

Protect your downloadings from Big brother

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18 years of seamless operation and our users' satisfaction

All languages

Brand new content

One site



AVXLIVE ICU

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IDEA IN BRIEF

THE PROBLEM

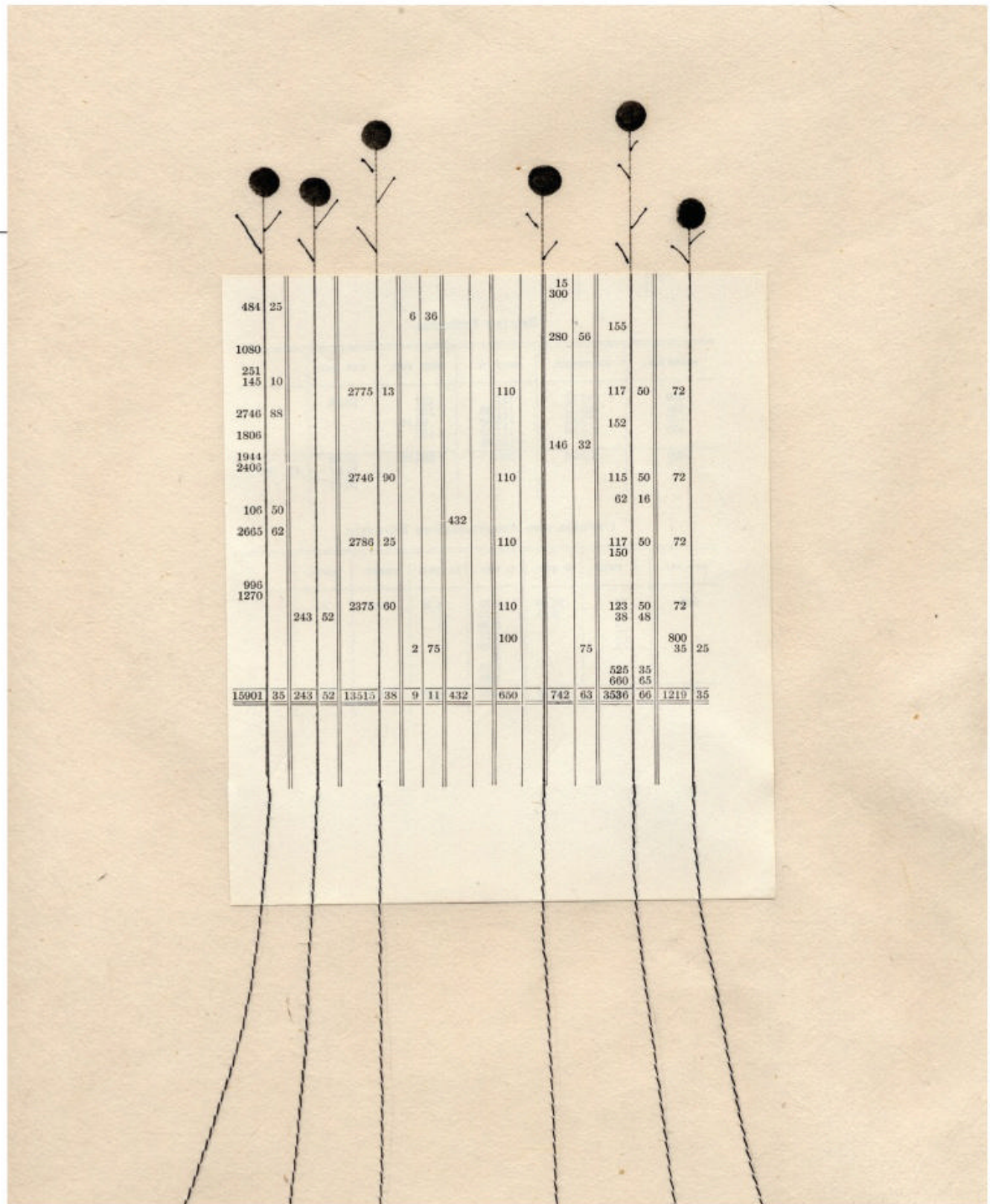
Many companies use algorithms to set prices and adjust them in real time so as to maximize profits. But constant price changes can alienate customers, undermine their loyalty, and damage brand reputation.

THE CAUSE

Pricing algorithms rely on artificial intelligence and machine learning to weigh variables such as supply and demand, competitor pricing, and delivery time. However, they often fail to consider the ways that frequent price changes affect customers psychologically, making them question the motives of companies and the value of their products and services.

THE SOLUTION

To better control what dynamic pricing says to customers and how it impacts customer relations, firms should develop a proper use case and narrative for implementing algorithms, assign an owner to manage them, set and monitor pricing guardrails, and act quickly to override the automation when necessary.



On June 3, 2017, blue lights flashed toward London Bridge as police cars responded to reports of a terrorist attack. They blazed past thousands of people who were enjoying a Saturday night at restaurants and pubs in the area. Many of those who were out on the streets, sensing danger, attempted to order an Uber and head home to safety. But for 43 minutes after the first emergency call came in at 10:07 PM, Uber's dynamic pricing algorithm caused rates in that part of the city to jump more than 200%.



ABOUT THE ART

The handcrafted infographics of Tsilli Pines explore the power that numbers have in our lives and the topography of money in human consciousness.



PRICING

The London episode is just one of many troubling examples of Uber's price surges during moments of collective anxiety. Similar spikes occurred during a 2016 bombing in New York City, a 2017 taxi drivers' strike in protest of U.S. anti-immigration policy, and a 2020 Seattle mass shooting—the last of which sent fares soaring as much as 500%. Uber's algorithmic pricing has consistently sparked criticism from the ride-sharing company's 93 million active users. Even on the night of the London Bridge attack, after Uber manually halted surge pricing near London Bridge, it remained in effect for the surrounding areas of central London for another 50 minutes.

An economist might applaud Uber's pricing engine: As demand increases relative to supply, the price of a ride climbs. For customers, however, the cost of using the service can seem as unpredictable as the spin of a roulette wheel.

Uber isn't the only company facing this problem. Firms in many industries—including advertising, e-commerce, entertainment, insurance, sports, travel, and utilities—have employed dynamic pricing with varying degrees of success. A classic and well-known example is Coca-Cola, which experimented in the late 1990s with temperature-sensitive vending machines that would increase the price of a beverage on a hot day. The company quickly abandoned the project in the wake of public outrage.

Pricing algorithms are intended to help firms determine optimal prices on a near real-time basis. They use artificial intelligence and machine learning to weigh variables such as supply and demand, competitor pricing, and delivery time. Unfortunately, algorithms occasionally go rogue and come up with figures no one would ever pay—from \$14,000 for a cabinet listed on Wayfair to almost \$24 million for a textbook offered on Amazon. But such snafus are just one of the risks when companies entrust decision-making to computers.

The constant changes in price points send strong signals to customers that need to be properly managed. Yet many organizations fail to appreciate this. They know that prices affect decisions about when and what to purchase, but they overlook the fact that continual ups and downs may trigger unfavorable perceptions of their offerings and, importantly, the company itself.

Brands thus need to consider more than simple math when employing algorithmic systems. These systems can

create an uncomfortable tension between earning customer loyalty and earning money. But implemented correctly, they can maximize revenue while also making customers feel as if they have paid the appropriate amount for a product or service.

In this article, we explore the psychology at play when companies ask customers for money. We examine real-world examples of algorithmic pricing and the ways in which it benefited or harmed the associated brand. We also detail the advantages of proper oversight and management, including determining which business unit should own the effort and what parameters should be set to limit the potential for misuse.

The Psychological Impact of Algorithmic Pricing

Let's start with the case of Root Insurance, which sells auto policies in 30 U.S. states. To better educate and foster relationships with its customers, the company devised a dynamic pricing program that treats each driver in a personal and transparent manner. Unlike its competitors, Root doesn't segment pricing using large, relatively anonymous risk pools generated from demographic data. Instead, it offers drivers a smartphone app that measures their day-to-day behavior behind the wheel. This data gets fed into an algorithm to calculate individual safety scores. Root then bases insurance premiums primarily on how well drivers perform, while giving some weight to traditional factors such as credit scores and insurance fraud statistics. To reduce bias against under-resourced customers, Root avoids considering anyone's education or occupation (other common industry factors), and it has committed to dropping credit scores from its rates by 2025. The company also insures only those people who pass its safety test. By weeding out bad drivers, Root claims it can reduce the expenses associated with accidents and lower the price of insurance for all its customers.

Root's model is an effective example of how pricing algorithms—and transparency about them—can improve customer relationships. First, before a customer ever sees the price of a Root policy, she knows what the company does



In the worst cases, algorithms turn the already delicate task of asking customers for money into an experience that drives them away.

and doesn't take into consideration. Second, the customer knows why she was offered a specific price that differs from what someone else might pay. Third, she knows what Root did on her behalf to minimize the final cost of insurance.

Making customers understand the mutually beneficial nature of algorithmic pricing is key to its success. That's because overpaying for something can be painful—literally. Research conducted by neuroscientists at Carnegie Mellon, Stanford, and MIT has shown that pain centers in the human brain are activated when people see a product with an excessive price tag.

The mere act of asking for money—regardless of when or how—instantly shifts the focus of the customer relationship from pursuing aligned interests to reconciling opposing interests. In the worst cases, asking for money can be alienating to customers. The challenge for the customer-centric organization is to minimize the risks and limit the damage that occurs when market norms drive price increases and intrude upon an otherwise well-nurtured relationship.

Before pricing algorithms became widely used, prices were stickier and differed little from one seller to another. Customers had relatively stable expectations and did not perceive prices as personal. Whenever price changes created discrepancies between actual and expected cost, it was easier for customers to rationalize the increases, believing that they were being implemented universally as part of a carefully crafted corporate strategy.

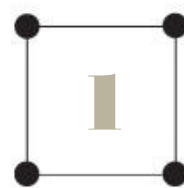
Technology has made the clashes more frequent, more arbitrary-seeming, and more startling in size—which unsettles customers and makes it harder than ever for them to reconcile what they see with what they expect. At the same time, many firms have come to believe that whenever customers' price expectations are stable and disruptions are minimal, the company must be leaving too much money on the table. In line with market norms, firms have increasingly turned to algorithms to maximize their profits. Today even the slowest-moving B2B industries are replacing Excel spreadsheets with powerful algorithmic-pricing tools.

Technology has enabled firms to deepen their relationships with customers and, in parallel, become more efficient and proficient in extracting money from them. This combination, however, often leaves customers wondering what they should think and which companies they should trust.

With their price sensitivity heightened, they work overtime to try to make sense of price changes. What do the fluctuations say about the quality or desirability of the product or service they're buying? About the motives and values of the seller? What does that firm really think of their patronage?

If price changes reach an equilibrium, the urgency of these questions can fade. But if the frequency and magnitude of intrusions remain uncertain, these questions will linger and ultimately force customers to draw their own conclusions, without explicit guidance from the seller. That is when customers start reacting to the algorithm's messages, not the firm's—a risky proposition for any business.

To better control what algorithmic pricing says to customers and how it impacts customer relationships, we offer four recommendations, along with illustrative examples that help clarify how each recommendation can be applied.



Determine an Appropriate Use Case and Narrative

In 2020 the Swedish furniture retailer IKEA launched a novel initiative at its Dubai location. For a limited period, the company allowed customers to pay different prices for products according to the time they spent driving to the store. Every item—from a sandwich at the restaurant to a complete bedroom set—had a price expressed in two units: the local currency and a time amount. A family that drove, say, 45 minutes to the IKEA store earned a certain value tied to the distance of its trip. At checkout, the family could show the cashier a Google Maps Timeline readout (using a feature of the Google Maps cell phone app that tracks and records all the routes one takes). The cashier would run an algorithm that factored time spent, distance traveled, and the average hourly wage of a Dubai worker to calculate the monetary value of the ride. The store then offered that value as a form of currency. The longer the trip, the more time credits the family got and the less money it needed to fork over.

The clear inference shoppers drew from IKEA's program was that the retailer wanted to incentivize them to travel great distances to its stores. Although different customers would pay different prices for the same items, and



PRICING

individual customers might see different prices each time they visited (depending on where they came from), they nonetheless felt they had agency in how much they would pay. That contrasts with the helplessness people often experience during pricing surges. Best of all, because customers' out-of-pocket costs could only decrease—in conjunction with distance traveled—as opposed to increasing as a result of heightened demand, no one ever paid more than the price advertised on the company's website. In other words, IKEA used the distance-based algorithm to reward customers rather than penalize them. It might have lost some immediate revenue: Shoppers who drove far enough could get steep discounts or even obtain some products free. But by choosing a proper use case, with built-in incentives for people to visit the store, the company probably attracted more remote customers and increased all customers' loyalty (and theoretical lifetime value).

Models like IKEA's are rare. Companies typically employ dynamic pricing to further their short-term financial goals with little regard for customers' perceptions. Yet the sheer volume and the intensity of price changes implemented by algorithms send unequivocal signals to buyers about everything from a company's mission and values to the quality of its offerings. These signals can crowd out other efforts to shape the narrative in a brand's relationship with its customers. In the worst cases, algorithms turn the already delicate task of asking them for money into an experience that drives them away. That is why firms cannot leave the management of pricing technology to data scientists alone.

The path to improvement is not just technical but organizational and psychological. As paradoxical as it might sound, a better algorithm might make matters worse—by exploiting circumstances and stirring resentment, as happened with Uber during the London Bridge attack.

Overcoming the organizational challenge starts with recognizing that algorithmic pricing is not simply a means to generate prices that bring supply and demand into balance. It is, in fact, a principle that needs to align with one's organization from top to bottom.

When customers have the impression that a firm bases its prices solely on supply and demand, the inferences they draw can be harmful. Think of an innovative firm with highly differentiated offerings. When that firm emphasizes

supply and demand in its pricing algorithm, it is essentially telling customers that the value of its product is mostly related to whether it is available or not—not how well it solves customers' problems or performs relative to competitors. Additionally, customers can learn to game the system and time their purchases to coincide with a moment when they believe the price is low. This again drives commoditization. By contrast, IKEA's dynamic pricing model focused on attracting unlikely customers rather than penalizing likely customers because of a lack of supply.



Designate a Pricing Algorithm Owner

In 2019 United Airlines eliminated the mileage tables that frequent fliers relied on to redeem their reward points. It replaced the tables with an algorithmic pricing model, explained why it was necessary to tie award travel to supply and demand, and emphasized how customers could benefit (by spending fewer award miles for off-peak flights).

The new system did result, though, in higher award prices for high-demand flights. That certainly frustrated rewards customers, but the airline communicated all the changes in an easily understandable way, and it focused its efforts on a specific (and presumably loyal) customer base. In doing so, it was able to mitigate significant reputational damage. Additionally, because it delegated management of the new algorithm to the team that supervised the loyalty program, United gave clear ownership of the pricing system to a department that was highly attuned to the sensitivities of the most steadfast customers. That strategy enabled the airline to monitor and quickly respond to glitches with the algorithm or challenges with customer relationships.

It is easy to blame the algorithms themselves when they go haywire, but the root causes of the problems usually lie in other areas—inadequate organizational attention or a failure to appreciate customer psychology. Most firms have an incomplete understanding of what really happens when they ask customers for money. They focus too intensively on the numbers, which they view as little more than the passive outcomes of the market forces that shape supply and



PRICING

demand. To use Adam Smith’s term, the “invisible hand” does the work, not the firm itself.

This myopia leads companies to overlook all the other information that prices convey. Even when organizations do recognize the power of this information and its implications, most firms cannot manage it effectively, because pricing is an organizational orphan, with no clearly defined leadership, responsibility, and accountability.

When companies blithely hand off the heavy lifting of pricing to automation, they cede to the algorithms not only the control of the math but also the messaging. While the data scientists, data analysts, and pricing specialists focus on optimizing the numbers, who is making sure that the messages are optimal? The answer in many organizations is no one.

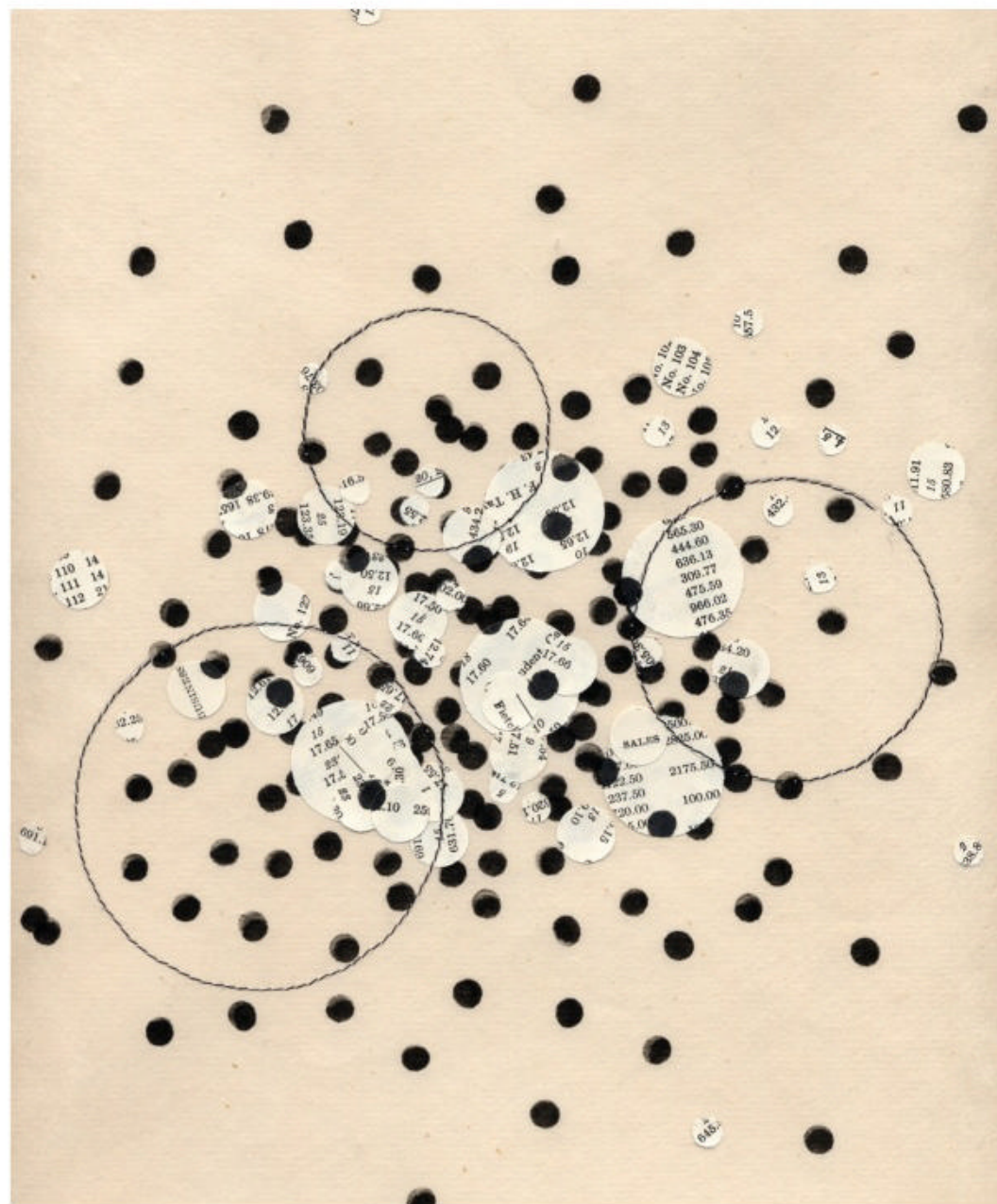
A pricing algorithm on its own has two weaknesses. First, it lacks the empathy required to anticipate and understand the behavioral and psychological effects that price changes have on customers. Second, it lacks the long-term perspective required to ensure compliance with a corporate strategy or overarching purpose. By emphasizing only supply-and-demand fluctuations in real time, the algorithm runs counter to marketing teams’ aims for longer-term relationships and loyalty. This conflict between long-range thinking and real-time price changes does not merely intensify the clash between earning goodwill and earning money; it also increases the urgency of finding a solution before the brand suffers irreversible damage.

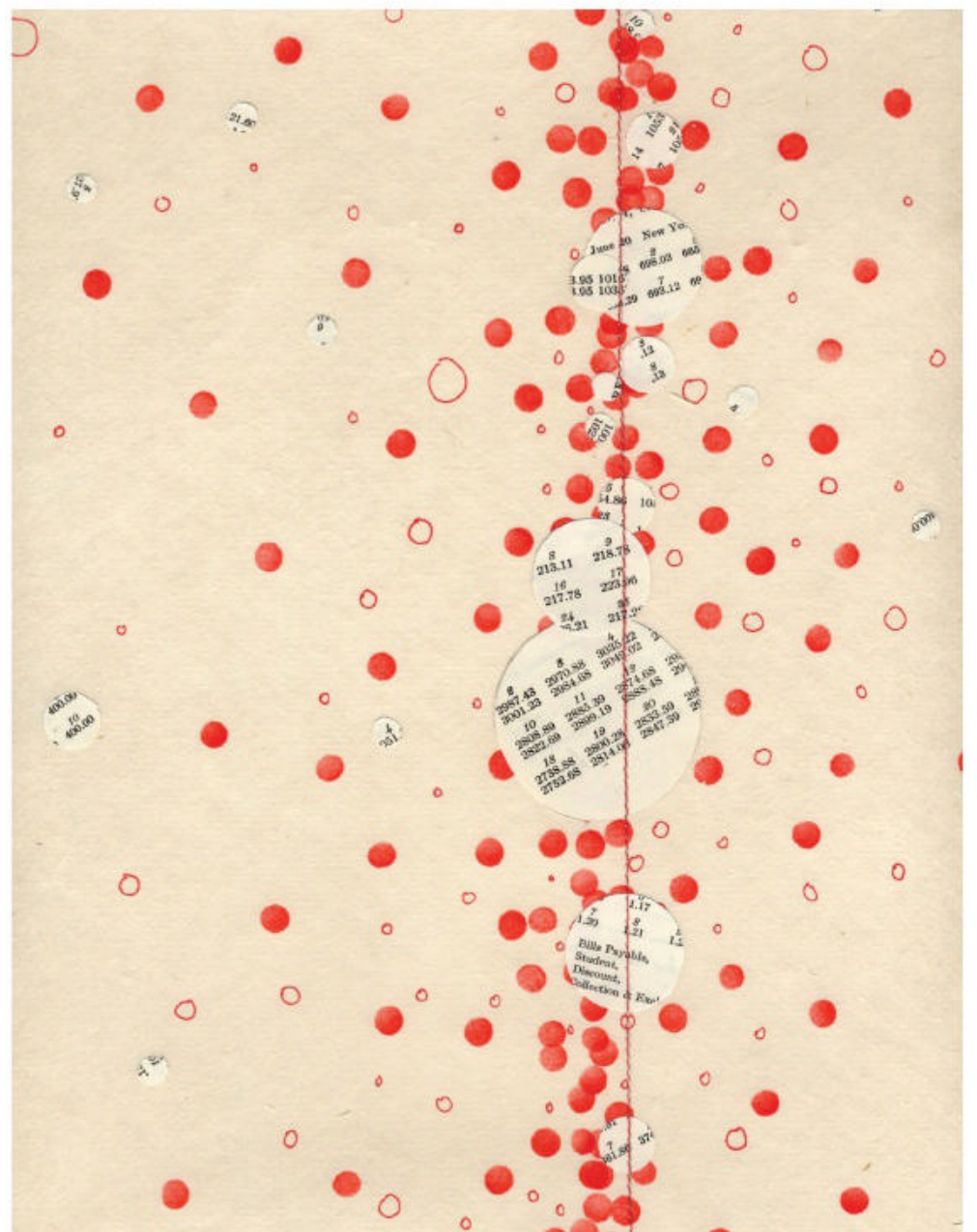
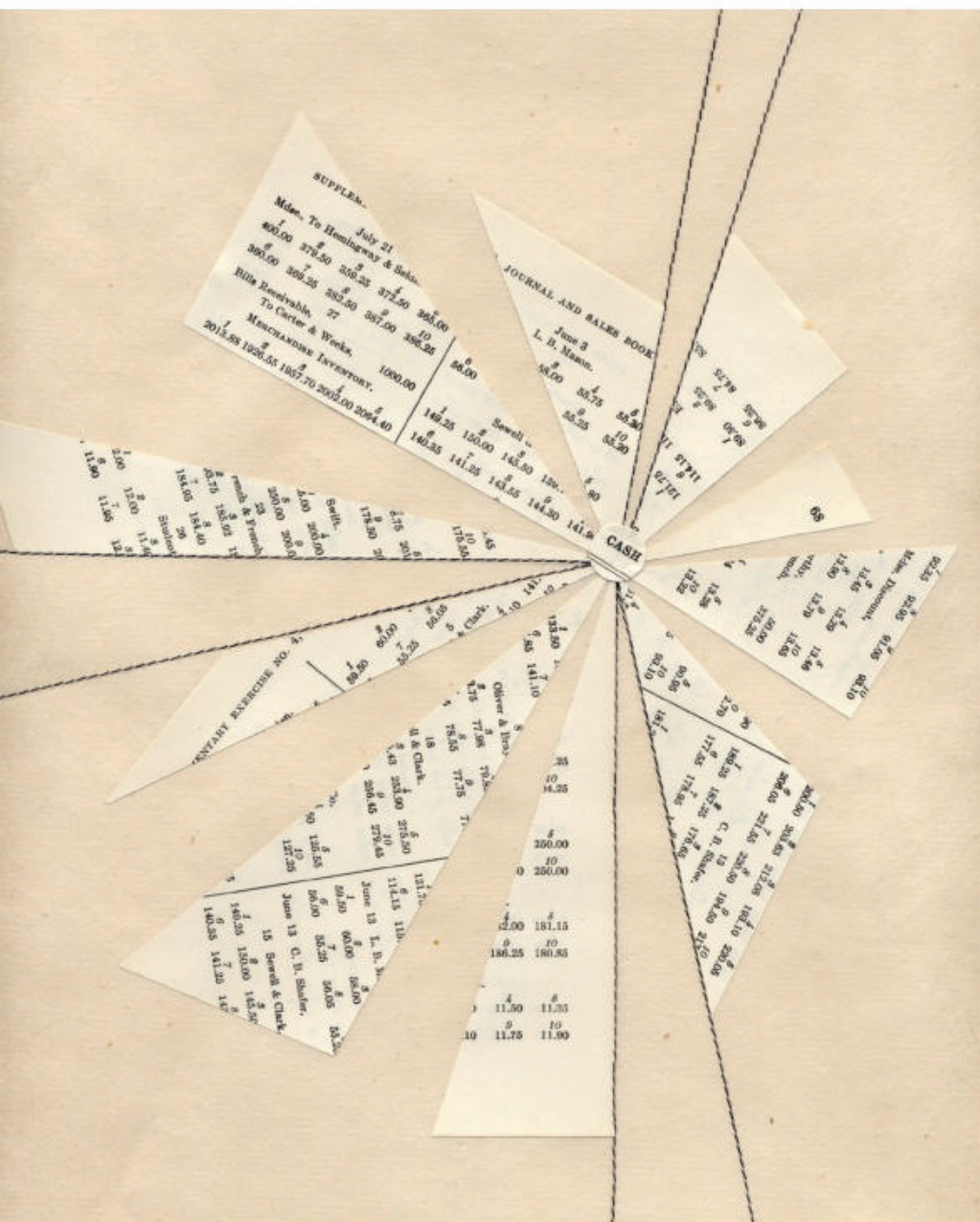
If a firm does not manage its price setting and messaging proactively and strategically, it can trigger and even accelerate the commoditization of its offerings by heightening price sensitivity, undermining price-value relationships, and tarnishing brand reputation. But by empowering a team that can plan its initiatives and make in-the-moment decisions about them, the company can pivot quickly when predicaments occur.



Set and Monitor Pricing Guardrails

Think about a typical poor experience at a theme park. Guests have to suffer through long lines for rides, food,





can lead to significant cost savings. Second, the customer experience improves dramatically because guests can enjoy more rides, visit more attractions, and better use their time in the parks. Finally, the dynamic pricing program can be explicitly publicized as a commitment to long-term customer satisfaction (despite an overall increase in prices).

When Disney World switched to its algorithmic system, it also determined that it would be in its best interest to no longer dynamically price single-day entry to its individual theme parks (Magic Kingdom, Epcot, Animal Kingdom, and Hollywood Studios). Pricing for single-day tickets across all four properties was set from \$109 to \$129 no matter what time of year a customer chose to visit, regardless of demand. That guardrail limited the amount that Disney could charge for a single-day pass, but it set clear parameters that helped customers anticipate their costs and plan their visits. And by observing how they self-selected their trips, Disney could sharpen its communication about the park experience and design additional service packages to cater to different customer segments.

Other companies can use guardrails in a similar way—not just to protect customers from wild price swings but also to judge how pricing impacts every area of the organization. When establishing the initial guardrails and continuing to deploy them, firms should encourage information sharing among different lines of business. That’s the best way to extract key learnings and use them for the company’s benefit. We see three primary areas for closer collaboration across functions to glean insights from algorithms:

Experimentation. Controlled, periodic testing of prices can help a company measure the extent to which customers value a product or service, or any of its features, and understand the context of when and how they derive that value. Indeed, pricing experimentation can be far more powerful than traditional market research, because customers are reacting to actual offerings and making real transactions. Their responses to price shifts help firms discover what works, what doesn’t, and at what point buyers first make their purchase decisions.



A firm must strive to ascertain how customers perceive its mission and purpose and whether its price actions reinforce or harm the reputation it's trying to establish.

	BALA	NC	E SHE	ET,		ASSETS.	
	74079	60			428193		47
	66325	61				56168.35	
	27000					4376.85	
			167405	21		13021.60	
	28349	54				3980.40	
	35910	82				77547.20	
	1148	14				11221.59	
	22830	76					
			88239	26		10749.54	
			255644	47		17600	
10					428193		47
40					479281		70
					479281		70
					55271		63
					14107		
					14107		



PRICING

Monitoring. Firms can develop a new key performance indicator or compare existing indicators to ensure that the frequency and magnitude of price changes are not eroding customer loyalty or brand reputation. No company wants to be perceived as unfair, manipulative, or greedy. Thus it's important to take measures to constrain and manage the output of the pricing algorithms, and vital to think through the messages and their consequences in advance. This enables firms to avoid extreme and free-floating prices by implementing hard floors and ceilings, as Disney did with its fixed single-day pricing.

Strategy. This is essentially a long-term, integrated view of the first two elements. Are the firm's product development, branding, positioning, and pricing all working in harmony—or with the least amount of friction—to fulfill the company's strategic objectives? The firm must strive to ascertain, directly or indirectly, how customers perceive its mission and purpose and whether its price actions reinforce or harm the reputation it's trying to establish. The messages that customers infer from prices should sync up with the explicit messages that a company communicates through its nonprice activities to promote itself and its products.

When firms pay attention to all the various ways that price changes can alter what customers believe and how they behave—beyond the immediate buy-or-no-buy decision—they can enhance the customer relationship rather than diminish it, even when they raise prices. Firms can tap into the power of price changes to improve their operations and at the same time create a better overall experience for customers.



Override the Algorithms When Necessary

Far from the “set it and forget it” approach to pricing that was common in the past, organizations with a dynamic strategy must take a more proactive, creative stance to achieve the desired results. For Disney, IKEA, and United Airlines, the aims were simple: The brands wanted to make it worth the customers' while to transact, even under less-than-ideal circumstances (on less convenient days,

or despite long commutes to brick-and-mortar locations). They also wanted to benefit from being able to manage how, when, and why changes in pricing were communicated.

The best pricing algorithms can analyze customer data and other information to generate optimal prices for any given customer at any given time. But from whose perspective are those prices optimal? That question gets at the conflict between earning customer goodwill and earning more money, which presents a complicated organizational challenge that should be overseen by a clear owner and managed when necessary. Sometimes the algorithm might need to be tweaked; other times its use might need to be temporarily suspended.

THE DAY AFTER the London Bridge attack, Uber announced that it had refunded the payments of all riders who had hired a car in the affected area. It also boasted that its drivers had helped tens of thousands of people flee the scene. Both announcements would likely have enhanced the company's reputation had it not just been tarnished by the swift backlash to the price surge. Although it is difficult to quantify the lasting negative impact of that surge on Uber's relationship with its customers, it's clear that a faster response or a more proactive mechanism for preventing the soaring prices would have benefited the brand and the riders served that evening.

All companies should understand what their pricing algorithms are communicating to customers and how best to control that message. To effectively do so, they must develop a proper use case and narrative for implementing algorithmic pricing, assign an owner to monitor pricing guardrails, and empower that owner to manage or override the automation when necessary. By doing so, companies will be able to optimize dynamic pricing in real time without sacrificing customer loyalty or harming their reputation. 🛡️

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How Chinese Retailers Are Reinventing the Customer Journey

Five lessons for Western companies



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TECHNOLOGY





TECHNOLOGY

China is both a large and a fast-growing retail market—worth about \$5 trillion in 2020—and highly digitized.

Given that the pandemic has made digital every retailer's strategic priority, it's not hard to see why the *Economist* opened 2021 with a cover story headlined "Why Retailers Everywhere Should Look to China."

In China online sales have grown about 25% in each of the past seven years and reached about \$1.9 trillion in 2020, when they amounted to some 25% to 50% of total retail (compared with 10% to 20% in the United States). More than 90% of those sales are on mobile devices, compared with less than 50% in the United States. So it should be no surprise that Chinese companies and individuals have led the way in developing video retail, social commerce, community retail, retail-as-a-service, and many other new digital channels, including the super app, which provides an all-in-one experience for consumers by accessing various services and offerings.

Who are these leaders?

There's Douyin—known in the West as TikTok—which started as an entertainment app for sharing short videos and soon discovered that many users were commenting on popular videos by creating their own versions. Douyin encouraged participation by welcoming content creators, who often featured their favorite products and clothing styles, making the app a marketing tool. China's livestreaming market has

reached \$16.3 billion and is now integral to how people shop—which is why Walmart invested in Douyin.

Pinduoduo, the largest agriculture-focused platform in China, was founded in 2015 and is currently worth \$175 billion. Sometimes described as "Groupon on steroids," it has gamified the shopping process, enabling groups to haggle with merchants, often via WeChat.

Then there's Li Jiaqi, a 28-year-old influencer who pioneered digital cosmetics retailing and is known as the Lipstick King. He boasts more than 7 million followers on Weibo and close to 40 million on Douyin. He once sold 15,000 lipsticks in just five minutes and tried on 380 lipsticks in a seven-hour livestreaming show. Li Jiaqi is the only male key opinion leader (KOL) for cosmetics and the best salesperson for beauty products in China. A former beauty adviser at L'Oréal, he has phenomenal influence: His recommendations can make or break a product launch. He demonstrates and recommends the products of multiple companies and is paid according to the sales he generates.

These innovators owe much of their success to the massive ecosystems of Alibaba, JD.com, Tencent, and, increasingly, Pinduoduo, ByteDance, and Meituan, which serve as key touchpoints for consumers. They attract Chinese retailers and international brands by leveraging ever more data in innovations such as Alibaba's Tmall Smart Selection (a product recommendation algorithm) and Meituan's highly sophisticated logistics routing algorithm. As Tencent's founder, Pony Ma, put it in an internal presentation in early 2020, "The era of smart retailing ignited by 'super connectivity' just kicked off." (That said, China's government is taking a harder line with its biggest online enterprises. In late 2020 it blocked the IPO of Ant Group, a fintech company spun out of Alibaba, at the last minute. Alibaba was also fined some \$2.8 billion in April 2021 under the PRC's antitrust law.)

Retailers in Europe and the United States don't have access to such integrated ecosystems, but they can still usefully borrow from China's innovators. To identify how, we studied 25 Chinese digital retail companies, including the giants Alibaba, JD.com, Meituan, and Tencent; the emerging platforms ByteDance, Pinduoduo, and Ele.me; and successful brands such as Peacebird, Forest Cabin, Babytree, Soufeiya, and Xtep. In addition, our research benefited greatly from discussions with dozens of executives from



In China online sales have grown about 25% in each of the past seven years and reached about \$1.9 trillion in 2020, when they amounted to some 25% to 50% of total retail.

Western companies, including Amazon, Apple, Daimler, Luxottica, Nestlé, Nike, PayPal, Philips, Siemens, Starbucks, and Walmart, along with Japan's Sogo & Seibu (department stores) and Russia's X5 Retail Group (a leading food retailer).

In this article we draw on that research to explain five lessons that Western companies can learn from China as they develop their own digital market offerings.

1 CREATE SINGLE ENTRY POINTS

A single point online where customers can access all their potential purchases is the holy grail for retailers. China's digital giants have come close to achieving it by creating commerce ecosystems, general platforms offering portals for independent brands, and proactive automated product recommendations.

Ecosystems. For most digital retail consumers in China the first port of call is Taobao (Alibaba's mobile C2C portal) or Alipay, both of which give access to Alibaba's full ecosystem. Alipay, which is on almost every smartphone in China, integrates the platforms and service offerings of companies in Alibaba's huge retail network, enabling consumers to pay for any product or service they may find there, from Nike shoes to wealth management. Tencent's WeChat Pay provides similar benefits. Although users may not go online intending to make a transaction, WeChat Pay's deep integration with external platforms and specific brands means that they often end up doing just that. WeChat has pioneered a concept that allows any brand to develop dedicated but simple subapplications within the WeChat ecosystem. These typically fulfill functions such as e-commerce, coupons, and

task management and are searchable on WeChat's home page. After the initial success of this innovation, most other super apps adopted it.

General platforms. In China's B2C e-commerce market, the world's largest, most independent retailers access customers through platforms provided by Tmall, which accounted for 64% of China's total B2C e-commerce market in 2020, and by JD.com (26%). But players such as VIP.com, Xiaohongshu (RED), and Ymatou are increasingly winning share with specialized platforms: Ymatou focuses on cross-border commerce in high-quality branded products, and RED, often dubbed a lifestyle sharing platform, targets Generation Z and combines social media and e-commerce. China's increasingly sophisticated digital consumers go to these sites for information and to access a community of like-minded customers.

Proactive product recommendations. Digital has shifted power relationships in retail. Recommendation algorithms, livestreaming by KOLs, and "native" (embedded online) e-commerce stores in TikTok have changed the traditional dynamic whereby a purchase begins with the customer's search for a product. For instance, Tmall Smart Selection uses an AI-powered algorithm backed by deep learning and natural language processing to recommend products to shoppers; it then communicates consumer interest to retailers so that they can increase inventory to keep up with demand. That kind of functionality reflects the growing power of retailers relative to manufacturers.

Chinese retailers go further than Amazon does in aggressively leveraging partners and third-party providers (including for logistics, which Amazon mostly manages

IDEA IN BRIEF

THE CHALLENGE

Retailers in Europe and the United States are far behind China in digital retail.

WHY IT EXISTS

China's large and fast-growing market not only is highly digitized but also takes advantage of the massive ecosystems of Alibaba, Tencent, and others.

THE SOLUTION

To catch up, Western retailers can take five lessons from the Chinese experience: Create single entry points, embed digital evaluation in the customer journey, don't think of sales as isolated events, rethink the logistical fundamentals, and always stay close to the customer.



itself), rather than building in-house capabilities. The result is that Chinese retailers are already profitably offering at scale most of Amazon's newer, not yet scaled-up offerings, such as health care, insurance, online groceries, smart home devices, and fashion.

Options for the West. The main challenge for established Western retailers is to get closer to where the consumer is online rather than direct digital traffic to where products can be purchased. To be sure, this is simpler in China because of its less-stringent data privacy rules. But Western companies could do more with the data available to them—for example, by using blockchain to guarantee privacy.

Companies in Europe, given their experience with the EU's tight General Data Protection Regulation, are well-placed to build an early advantage. The Otto Group, in Germany, is a case in point. A catalog retailer for decades, it initially struggled with the arrival in 2008 of Amazon and Zalando, a German online shoe and fashion company. But Otto made early moves into digital solutions, in particular leveraging ventures such as Risk Ident (fraud prevention)

and Picalike (visual search) to build a platform with thousands of partners. Its online revenue for the fiscal year ending in February 2021 reached \$17.8 billion.

Another example is Lydia, an emerging financial-services super app from France, which offers peer-to-peer payment, flexible subaccounts, virtual cards for Apple Pay and Google Pay, and many other functions typically associated with Chinese super apps. To be sure, Europe and the United States have always had well-developed credit card services. But the real potential of super apps is not that they can replace credit cards or cash; it is that they provide a single entry point for consumers, incorporating financial services (lending, investment, insurance); e-commerce; goods delivery and tracking; ticketing for movies, live shows, airplanes, and trains; health care services (hospital reservations, medical consultations, pharmacies); taxi hailing; bike sharing; and a wide range of government functions, including taxation.

The same potential exists in Europe and the United States. Beyond privacy, we see few economic, political, or social barriers to one-stop solutions in the West. The cost to



ABOUT THE ART

Inspired by the booming popularity of online sales, Huang Qingjun asked people from across China to assemble everything they've ever bought online.



TECHNOLOGY

establish comprehensive platforms is relatively low, so new entrants will seize the opportunity if incumbents don't.

2 EMBED DIGITAL EVALUATION IN THE CUSTOMER JOURNEY

A key challenge for retailers is ensuring that consumers can efficiently and effectively evaluate their products in a transparent and unbiased way. With its strong emphasis on influencers and social media, Chinese retail evaluation is highly sophisticated and provides content much richer than what is available in the West.

Customer reviews. Simple scoring or comments on TripAdvisor and Amazon are no longer the standard for Chinese consumers, who provide thousands of detailed comments about products, brands, and shops on JD.com, Tmall, and Taobao, often with photos or videos attached.

Influencers. In the United States people follow key influencers such as Taylor Swift and Kylie Jenner primarily on Instagram, whereas China's opinion leaders have a presence on Weibo, WeChat, TikTok, and other platforms. A common criticism directed at Chinese influencers is that many of them are sponsored—but their neutrality isn't highly valued in Chinese culture. The relationship of an influencer and a consumer is that of a celebrity and a fan, and consumers often consult several influencers before making a decision.

Video livestreaming. Chinese consumers also frequently consult livestreamers, who consist of three main types: CEOs such as Dong Mingzhu of the appliance manufacturer Gree Electric and Li Bin of the electric car company NIO; movie actors and musical artists such as Li Xiaolu and Liu Tao; and professional sellers such as Li Jiaqi, who sold products worth \$145 million on Singles' Day in 2019, and Viya, known as the number one "sister" of Taobao Live.

Independent platforms. In reaching a purchasing decision, Chinese consumers rely far more on independent knowledge platforms such as Zhihu and Zhishi Xingqiu (which are similar to Wikipedia and Quora) than do Western consumers, who might consult *Consumer Reports* for high-value products.

Options for the West. As Chinese consumers have become more-sophisticated users of tech products, they've started consulting multiple data sources. Western companies

need to establish a presence on all the channels where consumers evaluate products—particularly video-based social media. That way they can overcome mistrust of promotional messaging and positive reviews on company sites. Currently the most popular livestreaming in the West runs on gaming platforms such as Twitch, whose tie-in with Amazon makes it a platform for influencer sales. Meanwhile, NTWRK, a mobile-first video shopping platform, features limited-edition products of brands such as Adidas, Guess, and Vans. On its platform the video game company Rooster Teeth and other popular influencers drive sales through product collaborations. Other Western retailers might consider this approach.

3 DON'T THINK OF SALES AS ISOLATED EVENTS

Providing a seamless experience when and where the consumer chooses can radically increase the chances of purchase. In the digital realm China has achieved this in three ways.

Deeply integrated online and off-line sales channels. At Alibaba's Hema Fresh supermarket, for example, consumers can make purchases while sitting at home, on the way to the market, or in the store. They might have fresh food delivered or decide to pick it up while shopping for other products. After JD.com invested in the supermarket chain Yonghui, in 2015, it connected Yonghui's off-line supermarkets to the JD Daojia ("JD to Home") application, which was launched that year in collaboration with Dada, a local on-demand delivery company. (The two merged the following year.) This level of integration brings big advantages. For instance, when the billion-dollar fashion retailer Peacebird closed down its brick-and-mortar stores during the pandemic, it could quickly pivot to online selling, because its sales system no longer differentiated between online and off-line.

Continuous purchasing opportunities. In China a purchase can be made at almost any point in an individual's entire online experience. A consumer might buy directly from an official WeChat account while chatting with friends or in one of WeChat's "mini program malls" or Alipay's mini program for a brand that has advertised in a friend's circle or been recommended in an alumni group. Entertainment and



TECHNOLOGY



A same-city order with a retail chain takes less than half a day to arrive in a large urban center like Shanghai.

shopping are fully integrated as well. A Chinese consumer watching a TikTok video can click on clothes she likes and end up in a native store. Or she might follow a friend's recommendation on WeChat to buy a product at a discount via Pinduoduo.

AI-enabled interfaces. AI-powered chatbots such as Dianxiaomi, which can understand more than 90% of customers' queries, are widely used in China; they did most of the talking during its "Singles' Day" on November 11, 2020, when Alibaba's online transactions exceeded \$74 billion. After-sales service, in terms of delivery, returns, and warranty, was conducted primarily online. According to recent statistics, 94% of online service at Alibaba is AI-enabled, and it earns customer satisfaction ratings 3% higher than service delivered by staffers.

Options for the West. Legacy businesses that are embracing digital approaches need to cut across the silos of online and off-line selling that have been traditional in the West. Even General Motors, the granddaddy of off-line manufacturing, now has more than 100 social media channels. Walmart, the archetypal bricks-and-mortar retailer, announced in February 2020 that it would combine its store and online buying teams in one omnichannel merchandising group. As Zeina Belouizdad, Google's omnichannel product lead for Europe, the Middle East, and Africa, said in late 2018, "We are living in an omnichannel world. Nothing is linear anymore." Consumers don't distinguish between off-line and online, and it is only for legacy reasons that the distinction still exists. Executives outside China should therefore consider aligning and centralizing their sales systems as part of digital transformation efforts.

The United States and large parts of Europe have digital platforms and promising new ventures that could facilitate such integration. Global retailers could potentially enhance their existing digital solutions by partnering with those businesses. For example, in the Netherlands, one of the largest European e-commerce markets, Jumbo supermarkets and the seafood retailer Schmidt Zeevis are taking advantage of the online supermarket Picnic. Consumers can choose where to buy their products and when, with smooth home delivery or in-store pickup options.

Although France's super app Lydia and other new ventures are promising, companies need to do much more to

broaden purchase options. In China, QR code payment and facial recognition scans are now common on Alipay, WeChat Pay, and many other payment apps. In Europe, however, most retailers use contactless card payment or require payments to go directly through a bank app.

4 RETHINK THE LOGISTICAL FUNDAMENTALS

China combines old-fashioned methods and high-tech software to deliver faster and at lower cost than almost any Western retailer can. A same-city order with a retail chain takes less than half a day to arrive in a large urban center like Shanghai, while local supermarkets can usually deliver orders in under 60 minutes. This speed is due primarily to large-scale, born-digital logistics integrators like Cainiao. A smart network, Cainiao leverages independently owned hardware and infrastructure such as warehouses and delivery vans and optimizes them across the country. These operations have several key features.

Gig workers. Last mile or local delivery to a customer's door, which is usually expensive, is a major challenge. In China this link in the supply chain is supplied by migrant workers (from the provinces) on bicycles or electric scooters. They are typically employed on a piecework basis by third-party logistics companies such as Meituan, which serves small grocers and restaurants, or by large online-off-line chains such as Hema Fresh. These workers constitute a large and cheap labor pool that few other countries can match.

Sophisticated routing technology. They may be riding bikes, but the workers are guided by routing software that speedily provides a large quantity of information. Once an order is placed, a middleware system subtracts it from the inventory, puts the information into the company's CRM system, chooses the nearest outlet for fast delivery, and alerts the nearest delivery worker. The delivery worker's app will even specify which stairs to take inside a building to get to the right floor, as instructions are passed on by the customer. As a result, delivery in China is extremely fast. Such efficiency enables workers to earn a good living, while employers can track each employee's contribution.

Free to the customer. The scale effects and highly efficient logistical operations keep delivery costs so low that most merchants can afford to cover them completely.



(Fresh-food delivery is an exception: It costs six times as much as regular delivery in China.) If a purchase exceeds a certain amount (typically \$15), or if a customer has brand membership through a loyalty program or for a token enrollment price, he or she can enjoy free delivery with speed.

Options for the West. Again, Western companies do not have access to an equivalent workforce, and navigating urban layouts can be challenging (imagine bike deliveries in Los Angeles). What's more, stricter labor regulation may make it harder to rely on gig workers. (That can be overcome, as evidenced by California's passage in November 2020 of Proposition 22, which preserved the nonemployee status of ride-share drivers.)

Companies will have to compensate by leaning more into tech. Many could digitize the back-end supply chain by deploying cloud-based warehouse management systems that are integrated across stores, enabling faster and more-flexible delivery services. Big data analytics will also contribute—subject to privacy constraints. In time, technology may even make it possible to take labor out of the equation, as autonomous vehicles and drones become feasible for

physical delivery. For example, Ericsson, Einride, and Telia have partnered to launch 5G-powered driverless and environmentally friendly trucks. Nuro, a self-driving delivery start-up, is teaming up with Domino's, Walmart, and CVS. And in the field of logistics competitors are working together to build huge data pools that will enable faster, better predictive analytics—as seen in the partnership of the rival vehicle telematics companies Geotab and Webfleet Solutions.

5 ALWAYS STAY CLOSE TO THE CUSTOMER

In China customer loyalty in digital retailing is generated in large part by extraordinarily high levels of after-sales engagement by companies and loyalty programs that are integrated into both e-commerce channels and social media. Companies also work with influencers and cultivate fan communities of their own.

Radical engagement. Chinese retailers truly treat the customer as royalty. Most online shops allow free returns with no explanation within seven days of a purchase (excluding fresh produce). Customers may choose a convenient



pickup time for their returned products. Retailers offer instantaneous personal assistance via chatbots. Free hotline support is readily available, often 24/7. For products that require on-site services (such as installation), customers may choose days and precise time slots. These services are often supplied by local shops that carry the brand. For example, the wooden-door producer Tata Pravesh treats its traditional distributors as after-sale service providers for customers purchasing from the online store. The distributors get the same financial return they would if the products had been sold in their off-line shops.

Integration across entry points. Customers have as many touchpoints with loyalty programs as they do with brands. Coupons and digital red envelopes (traditionally exchanged by relatives and friends during celebrations) are daily offerings on large platforms such as Taobao, Tmall, JD.com, and Meituan (for restaurant food order and delivery). Online shops offer deep discounts every day during certain hours to attract return customers and discounts for customers who make successful recommendations to

friends on social media. Loyalty programs are integrated across all digital channels.

Influencer relationships. As noted, the Chinese rely heavily on key opinion leaders' recommendations; in many cases KOLs command more loyalty than the brands they recommend. Chinese retailers piggyback on that relationship by cooperating with these KOLs, who often become associated with a particular brand. Some KOLs cut across product categories, representing brands for each. For example, Viya sells everything from makeup and shoes to rice and even houses. She sold goods worth \$4.5 billion in 2020 with a team of just 500 people.

Fan marketing. The home electronics company Xiaomi has created a huge base of loyal users who help promote the brand. Its fans will buy anything Xiaomi sells. Now the company has its own online ecosystem, having partnered with more than 300 producers to sell their products to its fans under the Xiaomi brand. On April 1, 2021, Xiaomi announced that it would invest \$10 billion over the next 10 years to produce smart electric cars. The company has sharpened its



industrial and project design capabilities to give products under its brand name a similar look and feel at an affordable price. This type of fan economy is steadily growing in China.

Options for the West. Western companies should leverage digital platforms to offer loyalty rewards more often, more explicitly, and in more places. They can also use their various channel partners to improve delivery and service. And continuous tech-enabled tracking of service delivery processes and customer engagement will motivate sales agents and other employees to attend to customers' needs.

In other aspects of customer engagement, Western retailers are not so far behind. The U.S. exercise equipment company Peloton's creation of an online community of users has been a major driver of its success and a source of innovative ideas. And at least one fast-fashion retailer, Shein, based in the United States but founded in China in 2008, uses influencers as its main channel to customers. It is hugely successful with this approach, generating multibillion-dollar revenues and challenging even Zara, the longtime leader in the sector.

WESTERN RETAILERS LAG their Chinese counterparts in leveraging customer data to make better business decisions, increase operational efficiency, and reduce costs. They need to integrate that data with off-line businesses so that customers are visible, identifiable, and traceable both online and off-line. Retailers need to establish contact with customers online through multiple touchpoints, including social media ecosystems, to increase their stickiness, loyalty, and activity. Digital retailing is an organizational transformation in the making. A famous Chinese saying has it that "a journey of a thousand miles begins with a single step." The new customer journey begins with many steps. 📍

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LEADERSHIP



PHOTOGRAPHER DAVE SANDFORD

Don't Let Power Corrupt You



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How to exercise influence without losing your moral compass







LEADERSHIP

As the physician Vera Cordeiro tended to impoverished children at Rio de Janeiro's bustling Lagoa public hospital, her anger mounted. Illnesses easily treated in private hospitals for the well-to-do were death sentences for many of her patients, who lacked regular meals and sanitary living conditions. So in 1991 she founded a nonprofit, Associação Saúde Criança (Brazil Child Health), to break the cycle of poverty by providing the medical care the children needed and supporting their vulnerable families.

Initially Cordeiro relied on personal funds and the help of family and friends. But in time she realized that she had to seek the support of Rio's rich and powerful. Although uninterested in—even somewhat repelled by—power herself, she worked hard to attract the attention of private donors, government authorities, the media, and the public. Her NGO (since renamed Instituto DARA) became one of the country's most successful nonprofits. Accolades poured in.

Along the way, Cordeiro realized she had become more comfortable with power. She was well-connected nationally and internationally and frequently spoke at the World Economic Forum and other prestigious conferences. But she started to get troubling feedback from people close to her. Colleagues complained that she was constantly interrupting them and running roughshod over their ideas. Her adult daughter wondered why she now cared so much about awards ceremonies and other high-profile events. She recognized that her immersion in power was changing her.

Having once been wary of power is no guarantee that you are immune to abusing it. We are all susceptible to its intoxicating effects. Essential though power is to taking charge and leading change, it makes you vulnerable to two insidious traps—hubris and self-focus—that can not only erode your own effectiveness but also undermine your team's. We have studied and taught classes in power for two decades and have interviewed more than a hundred people on five continents about how they attained and exercise it. In this article we offer strategies for recognizing power's pitfalls, as Vera Cordeiro ultimately did, and avoiding them.

IDEA IN BRIEF

THE PROBLEM

Essential though power is to taking charge and leading change, it makes people vulnerable to two insidious traps—hubris and self-focus—that can not only erode their own effectiveness but also undermine their team's.

THE REMEDY

Humility is an effective antidote to hubris, and empathy counters the self-absorption that power can bring.

HOW TO ACHIEVE IT

Leaders can cultivate humility in themselves and others by making it acceptable to say, "I don't know," establishing channels for honest input, creating reminders that success is fleeting, and measuring and rewarding humility. They can cultivate empathy by immersing themselves in other people's jobs, using storytelling to make things personal, embedding interdependence in organizational systems, and stepping out of their companies into the real world.



ABOUT THE ART

Dave Sandford photographs the powerful waves of the Great Lakes. Cold arctic air pushing against a warm front from the south creates perfect storm conditions, high winds, waves that can reach heights of 20 to 30 feet, and even shipwrecks.

The Dangers of Hubris and Self-Focus

The perils of hubris—the excessive pride and self-confidence that can come with power—are well-documented. Consider a study in which some participants were asked to write about a time when they felt powerful while others wrote about feeling powerless. All were then given a die, offered a reward for correctly predicting the outcome of a roll, and asked if they wanted to throw the die themselves or have the experimenter do it. Only 58% of those who had written about feeling powerless rolled for themselves, while every single participant who wrote about feeling powerful did so. Simply recalling an experience of power can lead people to greatly overestimate their abilities, even to the extent of thinking they can affect a random roll of a die.

If that's what thinking about power for a few minutes can do, imagine the implications of holding an important position for years. It's no wonder studies of CEO hubris abound. Research shows that top executives who have experienced and been lauded for success become so overconfident that they'll pay vastly inflated premiums for acquisitions, especially when board vigilance is lacking. The greater the CEO hubris and acquisition premiums, the greater the shareholder losses. If power goes to your head, everyone loses.

Psychologists have documented the impact of reflecting even briefly on one's power relative to that of others. In one study, researchers asked participants to think about either those with the most wealth and prestige in the United States or those with the least, and then to mark their own position on a ladder. Reflecting on the most-powerful people led participants to feel relatively powerless and to place themselves low on the ladder, while reflecting on the least powerful led them to place themselves higher. The participants were then given a well-known test, Reading the Mind in the Eyes, which measures people's empathy by asking them to discern others' emotional states from photos of their eyes. Those who had been led to think of themselves as high-ranking were significantly less accurate; the feeling of power made them less attentive to others' emotions.

Such insensitivity is often reflected in managers' poor understanding of the relationships among subordinates. Research shows that the ability to map networks is a source of power—but paradoxically, as people become more powerful,

Are You Humble?

The researchers Bradley Owens, Michael Johnson, and Terence Mitchell developed the following assessment for humility. What would your colleagues say about you?

1. This person actively seeks feedback, even if it is critical.
2. This person admits when he or she doesn't know how to do something.

3. This person acknowledges when others have more knowledge or skills.

4. This person takes note of others' strengths.

5. This person often compliments others on their strengths.

6. This person shows appreciation for the contributions of others.

7. This person is willing to learn from others.

they are less likely to harness the benefits of accurately perceiving networks below them. That's because of the self-focus induced by power: People at the top tend to become less attentive to subordinates and can't be bothered to map their networks.

Not “seeing” the people you lead diminishes effectiveness all around. You can't lead colleagues you don't understand—and people aren't motivated or able to contribute their best efforts if they perceive that you are disconnected from and uninterested in them. You might be able to push through in the short term, but eventually their performance will suffer and your leadership may be called into question.

To effectively exercise power while avoiding its pitfalls, leaders must cultivate humility as an antidote to hubris and empathy as an antidote to self-focus. Those qualities increase openness to learning and altruism—the keys to using power toward a collective purpose that transcends self-interest.

Cultivating Humility

Humility—freedom from pride or arrogance—requires having an accurate perception of one's own abilities, accomplishments, and limitations. Several steps can help you instill it in yourself and your team.



Make it acceptable—even desirable—to say, “I don’t know.” Priscilla Luna is the vice president of enterprise operations at Loblaw’s Companies, a Canadian retail food and pharmacy chain. Here’s what she says about training pharmacy students early in her career: “I always told them, ‘When a patient wants to know something about their medication, don’t ever feel you must answer their question right away. If you know your answer 100%, of course go for it. But if you are not 100% sure, give yourself permission to tell them you’ll look into it. You build credibility and trust by being humble and saying, “I don’t know.”’ I still give this advice to my teams.”

Anne Mulcahy, the CEO of Xerox from 2001 to 2009, was dubbed “the master of ‘I don’t know!’” by her colleagues. “They actually gain confidence [in you] when you admit you don’t know something,” she says. Her humble approach created space for others to offer their expertise and engage in turning the troubled company around. Research confirms that when a leader expresses humility, the quality of team members’ contributions improves, and job satisfaction, retention, engagement, and openness to learning rise as well.

Establish ways to obtain honest input. When a few team members dominate the airtime, it’s generally out of a conviction that they know best and don’t need to hear from anyone else. But not even the strongest leaders have all the answers. And studies have shown that the extent to which members take turns speaking is one of the best predictors of team performance.

Having realized that hubris was beginning to affect her leadership, Vera Cordeiro knew she needed to manage the negative effects of power. So she structured her weekly

executive team meetings to give everyone the same amount of time to report on activities and share ideas and concerns. This fostered inclusivity and built a communal sense of responsibility. She also made a public commitment not to interrupt her colleagues and to listen carefully before voicing her reactions, and she asked others to do the same.

Leaders can encourage broad participation by establishing formal channels for honest input. Many companies do so through “all hands,” “open mic,” and “ask me anything” forums, starting with the top leadership team and extending all the way down the hierarchy. As the CEO of VIDA, a global platform that connects designers and manufacturers to produce and sell original apparel and accessories at scale, Umaimah Mendhro started weekly all-hands meetings. In them she was careful to model the approach she wanted everyone to adopt. “If I am the only one making decisions, then we are only as good as I am, and that’s not good enough,” she says. “The most important thing to me is to lead with curiosity and not ego, and to be transparent about what I know and what I do not know. I look to ask questions and make a conscious effort to listen carefully, and I have learned to be genuinely excited about all the moments I am proven wrong and others have proposed better ideas than mine. There is power in recognizing your own limitations and in empowering others.”

Some leaders create personal channels to obtain straight talk from their people. Tracy Abel, the chief operations and pension officer at Ontario Teachers’ Pension Plan, instituted a “culture council” consisting of 12 team members in whom she has a lot of trust. Their job is to give her candid feedback, no holds barred. They don’t hesitate to tell her when they don’t like something she’s said or done, and they serve as a



sounding board for her ideas. “It’s invaluable,” Abel told us. “It keeps you grounded.”

Sometimes opportunities for honest feedback emerge organically—and the best leaders embrace them. Ciarán Hayes did so after he became CEO of the Sligo (Ireland) County Council. While being shown around the offices, he was told that a particular table in the canteen was known as the bold table, because those who sat there—a mix of senior and middle managers and technical staffers—shared their opinions about all and sundry. “I determined that would be the table I would sit at—and true to form, everybody at it was ritually cut down to size, including myself,” Hayes says. “It was the perfect environment in which to keep your feet on the ground as well as your finger on the pulse.”

Create visible reminders that success is fleeting.

Historians have written that behind every victorious Roman general riding through the streets in a chariot stood a slave whispering, “*Hominem te memento*” (“Remember that you are [but] a man”). Nothing dampens illusions of infallibility more than a *memento mori*, a reminder of the impermanence of our lives.

Andrea Van Leeuwen, the head of marketing at Facebook and Instagram Canada, told us how Facebook reminds its employees of the transitory nature of success. Its headquarters is located in the former Sun Microsystems building, but instead of replacing the free-standing sign out front, the company simply flipped the sign over and put Facebook’s name on the back. “Whenever anyone does a campus walk-through, they see the sign and its reverse,” Van Leeuwen explains. “It’s a signal to say, ‘Just because you are doing well today doesn’t mean you’ll be around tomorrow.’” She adds

that when someone offers a differing viewpoint, employees are urged to ask themselves, “What if they’re right?”—a simple and effective reminder that others have something to offer.

Measure and reward humility. If you want to increase your humility, you must measure it. However, you can’t reliably assess it in yourself. An overconfident person is apt to claim, “I am the humblest person you’ll ever meet,” whereas someone who is genuinely humble will be more likely to say, “I try to stay humble, but I often fail.” To get a true picture of how humble (or not) you are, ask your colleagues for an honest assessment. (For guidance on specific criteria they can consider, see the sidebar “Are You Humble?”)

Cultivating Empathy

Psychologists have shown that people view themselves as either separate from and independent of others or connected and interdependent. Not surprisingly, the latter perspective inspires greater empathy and cooperation—antidotes to the self-absorption that power can bring. Empathy can be encouraged through simple interventions, such as having someone substitute interdependent pronouns (we, ours) when reading a story containing independent pronouns (I, mine).

New leaders tend to be self-focused. They often feel they have a lot to prove, and that takes their attention inward. Unless their development is stunted, they gradually come to see themselves as interdependent with larger entities: company, community, and country, and ultimately humanity and the planet. That sense of interdependence allows them



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to develop empathy: the ability to understand and share the feelings of others. Vera Cordeiro turned to meditation to help her counter a tendency toward self-focus. Developing a regular practice “helped me have more empathy for my staff and the families our NGO serves, reminding me of the primacy of our social mission,” she told us. In connecting empathy with her organization’s mission, Cordeiro took a fundamental step along the developmental path to exercising power wisely: embracing the recognition that we are all part of one human family.

The following actions can foster empathy in yourself and your team.

Immerse yourself in other people’s jobs. The more embedded you are in someone else’s reality, the more empathy you’ll feel. A manager who once held an entry-level job and makes a point of getting to know lower-level workers will appreciate the contributions of frontline personnel more than will a colleague who started in a mid-level position and ventures out of his or her office only for power lunches with clients and investors.

Recent-graduate hires at Bell Canada spend eight weeks in call center and retail positions to gain frontline customer-service experience in preparation for future management roles. The Ontario Teachers’ Pension Plan has a program whereby employees can “take a trip” to another part of the business, working there for a while before returning to their usual roles. We have studied social enterprises in the United States and Europe in which social workers and technical staffers shadow one another to gain a better understanding of others’ work.

Experiencing someone else’s reality firsthand builds empathy for colleagues and an appreciation for how various parts of the business are linked, creating the conditions to break down silos and enhance collaboration.

Use storytelling to make things personal. It’s not always possible, of course, to immerse oneself in another person’s job. Hearing others’ stories is a powerful alternative that likewise builds empathy. By creating space for such storytelling, organizations can help people transcend their own perspectives.

Janice Smith, the vice president of national sales at Rogers Sports & Media, told us that a wave of empathy was generated by “safe talk” sessions at the start of the Covid-19

What If You’re Too Humble?

When we talk with women (and some men) in leadership roles, they often raise entirely different concerns: Far from being overconfident, they are self-effacing and self-doubting, or their leadership is constantly challenged. Doubling down on humility feels like the last thing they should do. Instead these eminently accomplished people ask us, “How can I become less humble?”

We offer three answers.

FIRST, research shows that although the impact of power on hubris and self-focus may be greater for men, it is hardly exclusive to them. We all have to pay attention. The good news if you’re a female leader is that the very thing that constrains you can also help you: The world expects women to be humble and empathetic, making it easier to develop those antidotes to power’s poison.

SECOND, never mistake insecurity for humility. To

understand the difference, take a moment to write about two or three values important to you and how you use your skills and talents to live them. This simple exercise can help you reduce self-doubt and become secure enough to admit your limitations without defensiveness. And that confident humility—as Adam Grant calls it in his book *Think Again*—will radiate outward, quieting those who challenge your leadership.

THIRD, you can work to change your organization’s culture. By taking the actions we suggest, you can help hubristic, self-focused leaders around you develop humility and empathy. By giving people experiences that raise awareness of their limitations and interdependencies, you can instill an appreciation for the humble, empathetic style of leadership at which so many women leaders excel.

pandemic and continued during the protests after the murder of George Floyd. “These are brave individuals who come together and share their personal experiences and stories of pain, with the deepest vulnerability and transparency,” she says. “These sessions are a safe space, and the trust they create is not only a comfort in a time of great need but immensely powerful and life-changing. Colleagues from all levels and every area of the business listen to these stories, learn and educate, get inspired, and become better people. It’s been a game changer for company culture.”

Embed interdependence in organizational systems. Companies can also combat self-focus by building an awareness of interdependence into their systems. Microsoft has removed ratings from its performance review process, refocusing evaluations on collaboration. Managers first ask employees, “How did you contribute to the success of others?” They then want to know, “How did your results



A banking executive who volunteers at an inner-city school or a homeless shelter will think differently about the social role of financial institutions.

build on the work, ideas, and efforts of others?” During the review process, they also encourage reflection with the question “What could you have done differently?” This approach spotlights the reality that employees don’t work in a vacuum, they need one another, and their actions have consequences for their colleagues. It’s hard to remain self-focused in such a system.

During the pandemic, VIDA CEO Umamah Mendhro and her team wanted to strengthen awareness of the organization’s interdependence with the community and the environment. So they made VIDA a public-benefit corporation—a for-profit entity whose legally defined goals include making a positive impact on workers, the community, society, and the environment. “We do not want to fall into a place where we lose sight of our social responsibilities,” Mendhro explains. “It’s a matter of balancing power. By becoming a public-benefit corporation, we have structurally and legally created this accountability never to abuse power purely for profit. If I am no longer there, if we have another investor, or a buyer, they will know what they are getting: a company aligned with this accountability and responsibility.”

Step out of your company and into the real world. To appreciate your impact on others and develop empathy for them, you must move beyond the confines of your company and into communities whose lived experience is profoundly different from your own. This personal engagement is invaluable to shedding self-absorption and putting yourself and your business goals in perspective.

Anand Mahindra, the chairman of the Indian conglomerate Mahindra Group, understands the need for such connections. His mother, who came from a modest background, raised him with a healthy skepticism about those born to money (as his father was). She made sure her children met people from outside the halls of privilege, whom she saw as “the salt of the earth”: those who know about life’s hardships and about making it on one’s own. She sent Mahindra to a government-run school, attended by children from backgrounds very different from his own, rather than one of the private institutions typically attended by the children of the elite. The unease with privilege this instilled in him led Mahindra initially to stay out of the family business, he told us. Only later, when his family needed him, did he join the

firm, where his sensitivity to the perils of privilege became an important strength. “I’ve come to conclude that perhaps the best way to exercise power, the most responsible way to wield power, is to have a very constructive discomfort with it,” he says. Staying connected to the world at large is key to developing such discomfort.

We’ve seen the positive impact of engagement with the real world manifested in young people and seasoned executives alike. A university student from an affluent family who takes a summer job at a fast-food restaurant will know what it means to be at the bottom of a hierarchy and will have some insight into how tough it is to live on a minimum wage. A banking executive who volunteers at an inner-city school or a homeless shelter will think differently about the social role of financial institutions. Whatever your stature and status, engaging with the community around you will help you resist self-focus.

A BALANCED RELATIONSHIP with power is seldom developed overnight; after all, our emotions, not just our thoughts, are in play. And as Vera Cordeiro discovered, even when we exercise power for a noble purpose, we remain vulnerable to its corrosive effects. But by cultivating humility and empathy and implementing organizational structures that ensure true power-sharing and accountability, we can avoid the twin pitfalls of hubris and self-focus. Leaders who do so will boost their own effectiveness and facilitate exceptional performance from their teams. The novelist and Nobel laureate Toni Morrison summed up the challenge and the opportunity succinctly. “If you have some power,” she used to tell her students, “then your job is to empower somebody else.” 

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ai Regulation



Is Coming



REGULATION



How to prepare for the inevitable



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ABOUT THE ART

Li Sun sees the “creatures” in his photographs as embodying the contradiction between the sense of freedom he felt as a child growing up in the countryside and the surveillance cameras he feels watching him on every corner in modern cities.

IDEA IN BRIEF

THE CHALLENGE

As companies increasingly embed artificial intelligence in their products, processes, and decision-making, the focus of discussions about digital risk is shifting to what the software does with the data.

WHY IS THIS A PROBLEM?

Misapplied and unregulated AI may lead to unfair outcomes, primarily because it can amplify biases in data. And algorithms often defy easy explanation, which is complicated by the fact that they change and adapt as more data comes in.

HOW TO FIX IT

Business leaders need to explicitly examine a number of factors. To ensure equitable decisions, they need to evaluate the impact of unfair outcomes, the scope of decisions taken, operational complexity, and their organizations’ governance capabilities. In setting standards for transparency, they must look at the level of explanation required and the trade-offs involved. In controlling the evolvability of AI, they need to consider risks, complexity, and the interaction between AI and humans.





FOR MOST OF THE PAST DECADE, public concerns about digital technology have focused on the potential abuse of personal data. People were uncomfortable with the way companies could track their movements online, often gathering credit card numbers, addresses, and other critical information. They found it creepy to be followed around the web by ads that had clearly been triggered by their idle searches, and they worried about identity theft and fraud.

Those concerns led to the passage of measures in the United States and Europe guaranteeing internet users some level of control over their personal data and images—most notably, the European Union’s 2018 General Data Protection Regulation (GDPR). Of course, those measures didn’t end the debate around companies’ use of personal data. Some argue that curbing it will hamper the economic performance of Europe and the United States relative to less restrictive countries, notably China, whose digital giants have thrived with the help of ready, lightly regulated access to personal information of all sorts. (Recently, however, the Chinese government has started to limit the digital firms’ freedom—as demonstrated by the large fines imposed on Alibaba.) Others point out that there’s plenty of evidence that tighter regulation has put smaller European companies at a considerable disadvantage to deeper-pocketed U.S. rivals such as Google and Amazon.



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AI increases the potential scale of bias: Any flaw could affect millions of people, exposing companies to class-action lawsuits.

But the debate is entering a new phase. As companies increasingly embed artificial intelligence in their products, services, processes, and decision-making, attention is shifting to how data is used by the software—particularly by complex, evolving algorithms that might diagnose a cancer, drive a car, or approve a loan. The EU, which is again leading the way (in its 2020 white paper “On Artificial Intelligence—A European Approach to Excellence and Trust” and its 2021 proposal for an AI legal framework), considers regulation to be essential to the development of AI tools that consumers can trust.

What will all this mean for companies? We’ve been researching how to regulate AI algorithms and how to implement AI systems that are based on the key principles underlying the proposed regulatory frameworks, and we’ve been helping companies across industries launch and scale up AI-driven initiatives. In the following pages we draw on this work and that of other researchers to explore the three main challenges business leaders face as they integrate AI into their decision-making and processes while trying to ensure that it’s safe and trustworthy for customers. We also present a framework to guide executives through those tasks, drawing in part on concepts applied to the management of strategic risks.

UNFAIR OUTCOMES: THE RISKS OF USING AI

AI systems that produce biased results have been making headlines. One well-known example is Apple’s credit card algorithm, which has been accused of discriminating against women, triggering an investigation by New York’s Department of Financial Services.

But the problem crops up in many other guises: for instance, in ubiquitous online advertisement algorithms, which may target viewers by race, religion, or gender, and in Amazon’s automated résumé screener, which filtered out female candidates. A recent study published in *Science* showed that risk prediction tools used in health care, which affect millions of people in the United States every year, exhibit significant racial bias. Another study, published in the *Journal of General Internal Medicine*, found that the software used by leading hospitals to prioritize recipients of kidney transplants discriminated against Black patients.

In most cases the problem stems from the data used to train the AI. If that data is biased, then the AI will acquire and may even amplify the bias. When Microsoft used tweets to train a chatbot to interact with Twitter users, for example, it had to take the bot down the day after it went live because of its inflammatory, racist messages. But it’s not enough to simply eliminate demographic information such as race or gender from training data, because in some situations that data is needed to *correct* for biases.

In theory, it might be possible to code some concept of fairness into the software, requiring that all outcomes meet certain conditions. Amazon is experimenting with a fairness metric called *conditional demographic disparity*, and other companies are developing similar metrics. But one hurdle is that there is no agreed-upon definition of fairness, nor is it possible to be categorical about the general conditions that determine equitable outcomes. What’s more, the stakeholders in any given situation may have very different notions of what constitutes fairness. As a result any attempts to design it into the software will be fraught.

In dealing with biased outcomes, regulators have mostly fallen back on standard antidiscrimination legislation. That’s workable as long as there are people who can be held responsible for problematic decisions. But with AI increasingly in the mix, individual accountability is undermined. Worse, AI increases the potential scale of bias: Any flaw could affect millions of people, exposing companies to class-action lawsuits of historic proportions and putting their reputations at risk.

What can executives do to head off such problems?

As a first step, prior to making any decision, they should deepen their understanding of the stakes, by exploring four factors:

The impact of outcomes. Some algorithms make or affect decisions with direct and important consequences on people’s lives. They diagnose medical conditions, for instance, screen candidates for jobs, approve home loans, or recommend jail sentences. In such circumstances it may be wise to avoid using AI or at least subordinate it to human judgment.

The latter approach still requires careful reflection, however. Suppose a judge granted early release to an offender against an AI recommendation and that person



then committed a violent crime. The judge would be under pressure to explain why she ignored the AI. Using AI could therefore increase human decision-makers' accountability, which might make people likely to defer to the algorithms more often than they should.

That's not to say that AI doesn't have its uses in high-impact contexts. Organizations relying on human decision-makers will still need to control for unconscious bias among those people, which AI can help reveal. Amazon ultimately decided not to leverage AI as a recruiting tool but rather to use it to detect flaws in its current recruiting approach. The takeaway is that the fairness of algorithms relative to human decision-making needs to be considered when choosing whether to use AI.

The nature and scope of decisions. Research suggests that the degree of trust in AI varies with the kind of decisions it's used for. When a task is perceived as relatively mechanical and bounded—think optimizing a timetable or analyzing images—software is regarded as at least as trustworthy as humans.

But when decisions are thought to be subjective or the variables change (as in legal sentencing, where offenders'

extenuating circumstances may differ), human judgment is trusted more, in part because of people's capacity for empathy. This suggests that companies need to communicate very carefully about the specific nature and scope of decisions they're applying AI to and why it's preferable to human judgment in those situations. This is a fairly straightforward exercise in many contexts, even those with serious consequences. For example, in machine diagnoses of medical scans, people can easily accept the advantage that software trained on billions of well-defined data points has over humans, who can process only a few thousand.

On the other hand, applying AI to make a diagnosis regarding mental health, where factors may be behavioral, hard to define, and case-specific, would probably be inappropriate. It's difficult for people to accept that machines can process highly contextual situations. And even when the critical variables have been accurately identified, the way they differ across populations often isn't fully understood—which brings us to the next factor.

Operational complexity and limits to scale. An algorithm may not be fair across all geographies and markets. For example, one selecting consumers for discounts may



appear to be equitable across the entire U.S. population but still show bias when applied to, say, Manhattan residents if consumer behavior and attitudes in Manhattan don't correspond to national averages and aren't reflected in the algorithm's training. Average statistics can mask discrimination among regions or subpopulations, and avoiding it may require customizing algorithms for each subset. That explains why any regulations aimed at decreasing local or small-group biases are likely to reduce the potential for scale advantages from AI, which is often the motivation for using it in the first place.

Adjusting for variations among markets adds layers to algorithms, pushing up development costs. Customizing products and services for specific markets likewise raises production and monitoring costs significantly. All those variables increase organizational complexity and overhead. If the costs become too great, companies may even abandon some markets. Because of GDPR, for example, certain developers, like Gravity Interactive (the maker of Ragnarok and Dragon Saga games), chose to stop selling their products

in the EU for some time. Although most will have found a way to comply with the regulation by now (Dragon Saga was relaunched last May in Europe), the costs incurred and the opportunities lost are important.

Compliance and governance capabilities. To follow the more stringent AI regulations that are on the horizon (at least in Europe and the United States), companies will need new processes and tools: system audits, documentation and data protocols (for traceability), AI monitoring, and diversity awareness training. A number of companies already test each new AI algorithm across a variety of stakeholders to assess whether its output is aligned with company values and unlikely to raise regulatory concerns.

Google, Microsoft, BMW, and Deutsche Telekom are all developing formal AI policies with commitments to safety, fairness, diversity, and privacy. Some companies, like the Federal Home Loan Mortgage Corporation (Freddie Mac), have even appointed chief ethics officers to oversee the introduction and enforcement of such policies, in many cases supporting them with ethics governance boards.



Should we require—and can we even expect—AI to explain its decisions? Regulators are certainly moving in that direction.



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TRANSPARENCY: EXPLAINING WHAT WENT WRONG

Just like human judgment, AI isn't infallible. Algorithms will inevitably make some unfair—or even unsafe—decisions.

When people make a mistake, there's usually an inquiry and an assignment of responsibility, which may impose legal penalties on the decision-maker. That helps the organization or community understand and correct unfair decisions and build trust with its stakeholders. So should we require—and can we even expect—AI to explain its decisions, too?

Regulators are certainly moving in that direction. The GDPR already describes “the right...to obtain an explanation of the decision reached” by algorithms, and the EU has identified explainability as a key factor in increasing trust in AI in its white paper and AI regulation proposal.

But what does it mean to get an explanation for automated decisions, for which our knowledge of cause and effect is often incomplete? It was Aristotle who pointed out that when this is the situation, the ability to explain how results are arrived at can be less important than the ability to reproduce the results and empirically verify their accuracy—something companies can do by comparing AI's predictions with outcomes.

Business leaders considering AI applications also need to reflect on two factors:

The level of explanation required. With AI algorithms, explanations can be broadly classified into two groups, suited to different circumstances.

Global explanations are complete explanations for all outcomes of a given process and describe the rules or formulas specifying relationships among input variables. They're typically required when procedural fairness is important—for example, with decisions about the allocation of resources, because stakeholders need to know in advance how they will be made.

Providing a global explanation for an algorithm may seem straightforward: All you have to do is share its formula. However, most people lack the advanced skills in mathematics or computer science needed to understand such a formula, let alone determine whether the relationships specified in it are appropriate. And in the case of machine learning—where AI software creates algorithms to describe apparent relationships between variables in the training

data—flaws or biases in that data, not the algorithm, may be the ultimate cause of any problem.

In addition, companies may not even have direct insight into the workings of their algorithms, and responding to regulatory constraints for explanations may require them to look beyond their data and IT departments and perhaps to external experts. Consider that the offerings of large software-as-a-service providers, like Oracle, SAP, and Salesforce, often combine multiple AI components from third-party providers. And their clients sometimes cherry-pick and combine AI-enabled solutions. But all an end product's components and how they combine and interconnect will need to be explainable.

Local explanations offer the rationale behind a specific output—say, why one applicant (or class of applicants) was denied a loan while another was granted one. They're often provided by so-called explainable AI algorithms that have the capacity to tell the recipient of an output the grounds for it. They can be used when individuals need to know only why a certain decision was made about them and do not, or cannot, have access to decisions about others.

Local explanations can take the form of statements that answer the question, What are the key customer characteristics that, had they been different, would have changed the output or decision of the AI? For example, if the only difference between two applicants is that one is 24 and the other is 25, then the explanation would be that the first applicant would have been granted a loan if he'd been older than 24. The trouble here is that the characteristics identified may themselves conceal biases. For example, it may turn out that the applicant's zip code is what makes the difference, with otherwise solid applicants from Black neighborhoods being penalized.

The trade-offs involved. The most powerful algorithms are inherently opaque. Look at Alibaba's Ant Group in China, whose MYbank unit uses AI to approve small business loans in under three minutes without human intervention. To do this, it combines data from all over the Alibaba ecosystem, including information on sales from its e-commerce platforms, with machine learning to predict default risks and maintain real-time credit ratings.

Because Ant's software uses more than 3,000 data inputs, clearly articulating how it arrives at specific



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assessments (let alone providing a global explanation) is practically impossible. Many of the most exciting AI applications require algorithmic inputs on a similar scale. Tailored payment terms in B2B markets, insurance underwriting, and self-driving cars are only some of the areas where stringent AI explainability requirements may hamper companies' ability to innovate or grow.

Companies will face challenges introducing a service like Ant's in markets where consumers and regulators highly value individual rights—notably, the European Union and the United States. To deploy such AI, firms will need to be able to explain how an algorithm defines similarities between customers, why certain differences between two prospects may justify different treatments, and why similar customers may get different explanations about the AI.

Expectations for explanations also vary by geography, which presents challenges to global operators. They could simply adopt the most stringent explainability requirements worldwide, but doing so could clearly put them at a disadvantage to local players in some markets. Banks following EU rules would struggle to produce algorithms as accurate as Ant's in predicting the likelihood of borrower defaults and might have to be more rigorous about credit requirements as a consequence. On the other hand, applying multiple explainability standards will most likely be more complex and costly—because a company would, in essence, be creating different algorithms for different markets and would probably have to add more AI to ensure interoperability.

There are, however, some opportunities. Explainability requirements could offer a source of differentiation: Companies that can develop AI algorithms with stronger explanatory capabilities will be in a better position to win the trust of consumers and regulators. That could have strategic consequences. If Citibank, for example, could produce explainable AI for small-business credit that's as powerful as Ant's, it would certainly dominate the EU and U.S. markets, and it might even gain a foothold on Ant's own turf. The ability to communicate the fairness and transparency of offerings' decisions is a potential differentiator for technology companies, too. IBM has developed a product that helps firms do this: Watson OpenScale, an AI-powered data analytics platform for business.

The bottom line is that although requiring AI to provide explanations for its decisions may seem like a good way to improve its fairness and increase stakeholders' trust, it comes at a stiff price—one that may not always be worth paying. In that case the only choice is either to go back to striking a balance between the risks of getting some unfair outcomes and the returns from more-accurate output overall, or to abandon using AI.

LEARNING AND EVOLVING: A SHIFTING TERRAIN

One of the distinctive characteristics of AI is its ability to learn; the more labeled pictures of cows and zebras an image-recognition algorithm is fed, the more likely it is to recognize a cow or a zebra. But there are drawbacks to continuous learning: Although accuracy can improve over time, the same inputs that generated one outcome yesterday could register a different one tomorrow because the algorithm has been changed by the data it received in the interim.

In figuring out how to manage algorithms that evolve—and whether to allow continuous learning in the first place—business leaders should focus on three factors:

Risks and rewards. Customer attitudes toward evolving AI will probably be determined by a personal risk-return calculus. In insurance pricing, for example, learning algorithms will most likely provide results that are better tailored to customer needs than anything humans could offer, so customers will probably have a relatively high tolerance for that kind of AI. In other contexts, learning might not be a concern at all. AI that generates film or book recommendations, for instance, could quite safely evolve as more data about a customer's purchases and viewing choices came in.

But when the risk and impact of an unfair or negative outcome are high, people are less accepting of evolving AI. Certain kinds of products, like medical devices, could be harmful to their users if they were altered without any oversight. That's why some regulators, notably the U.S. Food and Drug Administration, have authorized the use of only "locked" algorithms—which don't learn every time the product is used and therefore don't change—in them. For such offerings, a company can run two parallel versions of the same algorithm: one used only in R&D that continuously learns, and a locked version for commercial use that is



Regulators worry that continuous learning could cause algorithms to discriminate or become unsafe in new, hard-to-detect ways.

approved by regulators. The commercial version could be replaced at a certain frequency with a new version based on the continuously improving one—after regulatory approval.

Regulators also worry that continuous learning could cause algorithms to discriminate or become unsafe in new, hard-to-detect ways. In products and services with which unfairness is a major concern, you can expect a brighter spotlight on evolvability as well.

Complexity and cost. Deploying learning AI can add to operational costs. First, companies may find themselves running multiple algorithms across different regions, markets, or contexts, each of which has responded to local data and environments. Organizations may then need to create new sentinel roles and processes to make sure that all these algorithms are operating appropriately and within authorized risk ranges. Chief risk officers may have to expand their mandates to include monitoring autonomous AI processes and assessing the level of legal, financial, reputational, and physical risk the company is willing to take on evolvable AI.

Firms also must balance decentralization against standardized practices that increase the rate of AI learning. Can they build and maintain a global data backbone to power the firm's digital and AI solutions? How ready are their own systems for decentralized storage and processing? How prepared are they to respond to cybersecurity threats? Does production need to shift closer to end customers, or would that expose operations to new risks? Can firms attract enough AI-savvy talent in the right leadership positions in local markets? All those questions must be answered thoughtfully.

Human input. New data or environmental changes can also cause people to adjust their decisions or even alter their mental models. A recruiting manager, for example, might make different decisions about the same job applicant at two different times if the quality of the competing candidates changes—or even because she's tired the second time around. Since there's no regulation to prevent that from happening, a case could be made that it's permissible for AI to evolve as a result of new data. However, it would take some convincing to win people over to that point of view.

What people might accept more easily is AI complemented in a smart way by human decision-making. As

described in the 2020 HBR article “A Better Way to Onboard AI” (coauthored by Theodoros Evgeniou), AI systems can be deployed as “coaches”—providing feedback and input to employees (for instance, traders in financial securities at an asset management firm). But it's not a one-way street: Much of the value in the collaboration comes from the feedback that humans give the algorithms. Facebook, in fact, has taken an interesting approach to monitoring and accelerating AI learning with its Dynabench platform. It tasks human experts with looking for ways to trick AI into producing an incorrect or unfair outcome using something called *dynamic adversarial data collection*.

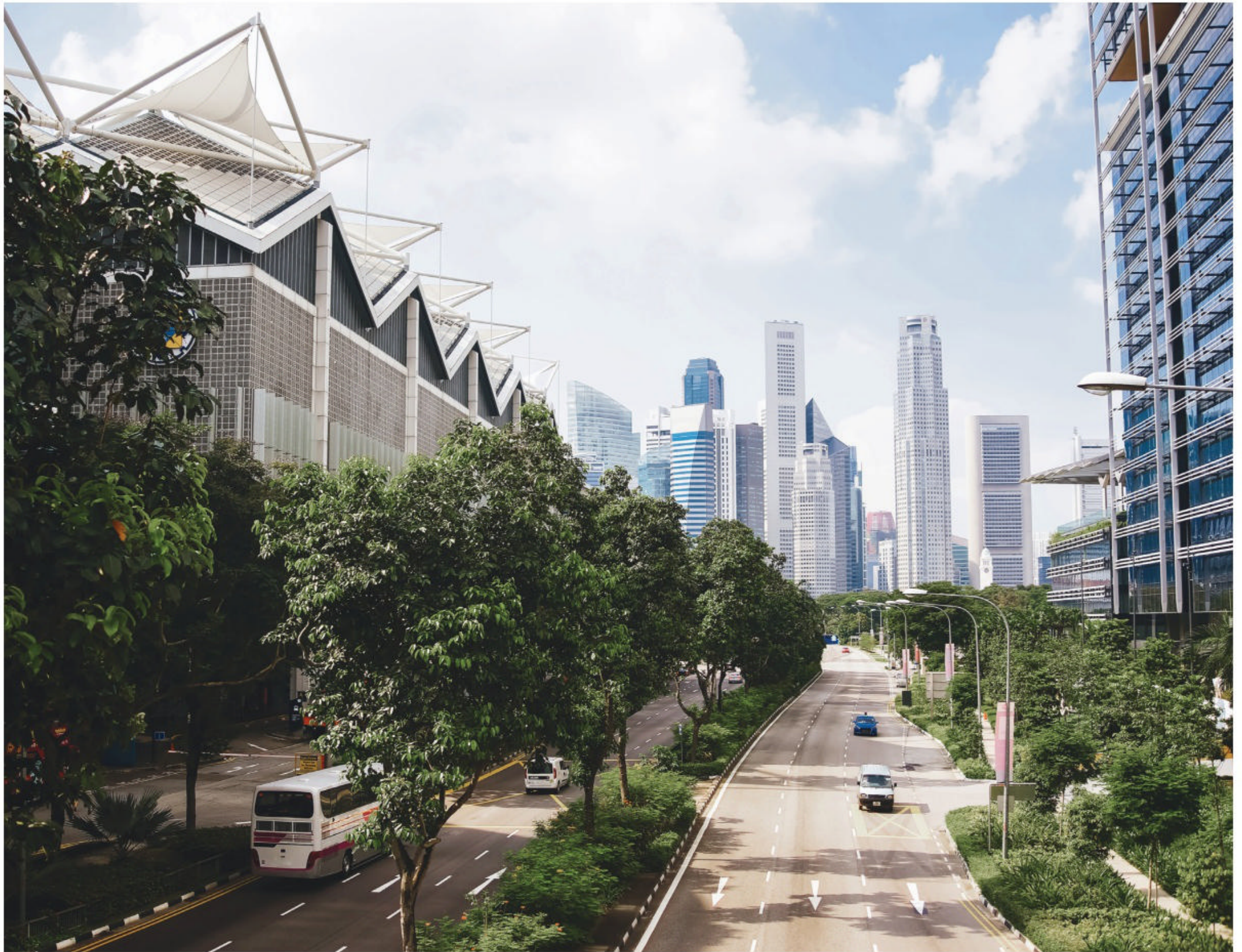
When humans actively enhance AI, they can unlock value fairly quickly. In a recent TED Talk, BCG's Sylvain Duranton described how one clothing retailer saved more than \$100 million in just one year with a process that allowed human buyers to input their expertise into AI that predicted clothing trends.

GIVEN THAT THE growing reliance on AI—particularly machine learning—significantly increases the strategic risks businesses face, companies need to take an active role in writing a rulebook for algorithms. As analytics are applied to decisions like loan approvals or assessments of criminal recidivism, reservations about hidden biases continue to mount. The inherent opacity of the complex programming underlying machine learning is also causing dismay, and concern is rising about whether AI-enabled tools developed for one population can safely make decisions about other populations. Unless all companies—including those not directly involved in AI development—engage early with these challenges, they risk eroding trust in AI-enabled products and triggering unnecessarily restrictive regulation, which would undermine not only business profits but also the potential value AI could offer consumers and society. 📌

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Transforming our future starts with every day.

The world is at an inflection point. To solve the big issues of our time, we require the combined effort of governments, companies and industry. The solutions matter – for our everyday quality of life and what we pass on to the next generation.

What’s good for people is good for business.

The relationship between economic efficiency and sustainability has changed over the past decades. We’ve gone from reputation management and a focus on lowering energy costs to more closely aligning sustainability targets with company goals and values. Today, meeting business goals and doing what is good for people and the planet go hand in hand.

Global megatrends are changing our world. They are the driving force behind change and at the same time, the manifestation of it. Change and transformation are vital for adaptation and growth. The good news: We can view megatrends as either an obstacle to or driver of our own transformation. For example, urbanization poses difficult challenges for us, but it also opens up an opportunity to re-think city infrastructures. In a similar way, climate change is driving the decarbonization of the global economy and accelerating sustainability – increasing our likelihood of achieving the 1.5 °C global warming target.

Governments and rich countries are not alone in the drive to protect the world’s climate and decarbonize the global economy: Companies and industries are also taking the lead. The transformation is already in full swing and governments and companies are supporting it with massive investment. To derive the greatest possible benefit from this momentum and achieve our goals for people and the planet, we need to establish new forms of collaboration and partnership and connect innovative technologies.

Siemens is leading this vital transformation. The company already has an enviable track record in environmental, social and governance (ESG) factors and Siemens is setting itself ambitious, measurable targets. Take decarbonization, for example: The company is working to have carbon-neutral operations by 2030. Siemens has also committed to reducing supply chain emissions by 20% by 2030 and to having a carbon-neutral supply chain by 2050. Given that Siemens has 65,000 suppliers around the world, this is a far-reaching commitment.

“We are truly convinced that sustainability is good business.”

Judith Wiese, Chief Sustainability Officer,
Siemens AG

At the same time, Siemens is aware that the greatest impact comes from supporting its customers and their operations as they transform their business and set new business goals. By using Siemens’ environmental portfolio, customers around the globe saved an additional 150 million tons of carbon in 2020.

The DEGREE sustainability framework

Decarbonization: Support the 1.5°C target to fight global warming

Ethics: Foster a culture of trust, adhere to ethical standards and handle data with care

Governance: Apply state-of-the-art systems for effective and responsible business conduct

Resource efficiency: Achieve circularity and dematerialization

Equity: Foster diversity, inclusion, and community development to create a sense of belonging

Employability: Enable our people to stay resilient and relevant in a permanently changing environment

Here is a vivid example: In the Azores archipelago, an autonomous battery-based energy storage system and microgrid from Siemens has increased the share of renewables to 60% while reducing carbon emissions by more than 3,500 tons per year. And there is movement in the mobility sector as well. The battery-powered Mireo commuter train, which recently won the German Sustainability Award for Design, delivers energy savings of 25% compared to previous models thanks to its Mireo plus battery.

The recently implemented DEGREE framework is Siemens’ logical step toward focusing all aspects of sustainability on one point. The DEGREE framework is a 360-degree approach for all stakeholders: customers, suppliers, investors, partners, societies and, above all, our planet. After all, in the fight against climate change, every degree counts.



DIVERSITY



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Unconscious Bias Training That Works

Increasing awareness
isn't enough. Teach people
to manage their biases,
change their behavior,
and track their progress.







DIVERSITY

Across the globe, in response to public outcry over racist incidents in the workplace and mounting evidence of the cost of employees' feeling excluded, leaders are striving to make their companies more diverse, equitable, and inclusive. Unconscious bias training has played a major role in their efforts. UB training seeks to raise awareness of the mental shortcuts that lead to snap judgments—often based on race and gender—about people's talents or character. Its goal is to reduce bias in attitudes and behaviors at work, from hiring and promotion decisions to interactions with customers and colleagues.

But conventional UB training isn't working, research suggests. In a 2019 meta-analysis of more than 490 studies involving some 80,000 people, the psychologist Patrick Forscher and his colleagues found that UB training did not change biased behavior. Other studies have revealed that the training can backfire: Sending the message that biases are involuntary and widespread—beyond our control, in other words—can make people feel they're unavoidable and lead to *more* discrimination, not less. In fact, in a 2006 review of more than 700 companies, Alexandra Kalev, Frank Dobbin, and Erin Kelly showed that after UB training, the likelihood that Black men and women would advance in organizations often *decreased*. It's no wonder that women and people of color continue to report high levels of unfair treatment at work.

The most effective UB training does more than increase awareness of bias and its impact. It teaches attendees to manage their biases, change their behavior, and track their progress. It gives them information that contradicts stereotypes and allows them to connect with people whose experiences are different from theirs. And it's not just a onetime education session; it entails a longer journey and structural changes to policies and operations—like the standardization of hiring processes, the elimination of self-assessments from performance reviews, and the institution of incentives for improving diversity. Rather than providing UB training as a check-the-box exercise, companies make a real, long-term commitment to it because they think it's worthy and important.

In a study we conducted at a pharmaceutical company, the results of two surveys we did, and the work of other scholars, we see the positive impact this style of UB training has. Not only do employees report heightened awareness of bias, but they also *show* less bias and prejudice weeks after the training. They start finding the workplace to be more inclusive—somewhere that differences are cherished rather than tolerated. And women, people of color, and people with disabilities report feeling a greater sense of belonging and respect for their contributions.

To unpack what drives these positive changes, we interviewed dozens of leaders—including chief human resource officers, learning and development executives, and diversity, equity, and inclusion officers—at companies that have

Previous spread: Mark Harris; woman: conal/Getty Images



Only 10% of training programs gave attendees strategies for reducing bias. Imagine a weight-loss program that told participants to step on the scale and left it at that.

implemented rigorous UB programs across a variety of industries. In this article we'll share what we've learned about how they're leveraging a more practical approach to UB training. (Disclosure: One of us—Gino—has conducted antibias training at organizations as a consultant, but they include none of the companies featured in this article.)

The Flaws in Conventional Approaches

Traditional UB training falls short in a number of ways. In a recent survey we did of more than 500 working adults from a wide range of U.S. organizations, three findings stood out. First, most organizations, worried about a backlash, make UB training voluntary. As a result it's embraced only by people who are already familiar with bias and interested in reducing it. Second, 91% of the respondents indicated that their firms don't collect information on the metrics they claim to care about, such as the race and gender of new hires and recipients of promotions and employee recognition awards. It's hard to improve something you're not even tracking. Third, 87% of the respondents indicated that at their firms UB training doesn't go much past explaining the science behind bias and the costs of discrimination in organizations. In fact, only 10% of training programs gave attendees strategies for reducing bias. Imagine a weight-loss program that told participants to step on the scale and left it at that. The idea that we can reduce our bias simply by being aware of it is the fatal flaw in most UB training. In fact, most programs end exactly where they should start.

A More Effective Model

Successful UB training gives people concrete tools for changing their behavior. It helps them better understand others' experiences and feel more motivated to be inclusive.

Consider an approach that Patricia Devine of the University of Wisconsin and her colleagues have developed, called "prejudice habit-breaking." Like conventional UB training, it teaches what implicit bias is, how it's measured, and how it harms women and people of color. After being educated, participants take the Implicit Association Test, which demonstrates that we all fall prey to unconscious bias to a degree, and then get feedback on their personal level of bias. Next they're taught how to overcome bias through a combination of strategies. These include calling out stereotyped views, gathering more individualized information about people, reflecting on counterstereotypical examples, adopting the perspectives of others, and increasing interactions with different kinds of people. After learning about each strategy, participants are asked to come up with examples of how they could use it in their own lives. They're taught that the strategies reinforce one another and that the more they're practiced, the more effective they will be.

This approach really works. In a longitudinal experiment, Devine and her colleagues had 292 college students participate in prejudice habit-breaking with a focus on race. Two weeks later the attendees noticed bias in others more than students who hadn't participated did, and were also more likely to label that bias as wrong. Two years later the researchers went back to a subset of the students and found

IDEA IN BRIEF

THE PROBLEM

Conventional training to combat unconscious bias and make the workplace more diverse, equitable, and inclusive isn't working.

THE CAUSE

This training aims to raise employees' awareness of biases based on race or gender. But by also sending the message that such biases are involuntary and widespread, it can make people feel that they're unavoidable.

THE SOLUTION

Companies must go beyond raising awareness and teach people to manage biases and change behavior. Firms should also collect data on diversity, employees' perceptions, and training effectiveness; introduce behavioral "nudges"; and rethink policies.



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that those who had participated were still more likely to speak out against bias than students who had not.

Using similar techniques, the same researchers trained STEM faculty at the University of Wisconsin to reduce gender bias. Afterward, departmental hiring patterns began to change. Over the next two years the proportion of female faculty hired in departments that had undergone the training rose from 32% to 47%; in departments that hadn't received the training, the hiring of women remained flat. Faculty members in participating departments—both women and men—reported feeling more comfortable bringing up family responsibilities and even that colleagues valued their research and scholarship more, an independent survey conducted months after the workshop found.

The companies we've seen get good results from UB training take an approach similar to Devine's. In addition, they have both individuals and the organization track and reflect on progress and identify where broader change is needed. We observed this at the pharmaceutical company, where we conducted a three-month study with about 400 people. Six weeks after UB training there, participants reported greater feelings of inclusion, showed less bias and prejudice, and made greater commitments to organizational change than the employees who hadn't participated. Moreover, after the company worked to eliminate bias from its performance reviews, employees felt that they seemed fairer, and data analyses confirmed that their perception was accurate.

Now let's examine in greater depth the elements of successful UB training and the complementary measures that should be taken to reinforce its goals.

1 Stress That “You Hold the Power”

UB training needs to help employees *act* on their awareness of bias. The idea is to empower them to change while cutting off their escape route—the inner voice that says, “I’m born like this, and there’s nothing I can do about it.” Here are some ways to do that.

Overcome denial. Even if we're aware of our bias, we're often ignorant of its extent and its consequences. A large-scale audit of human resource managers conducted by Devah Pager and Lincoln Quillian, for instance, found clear evidence of discrimination against Black candidates in

hiring. Over seven months in 2001, matched pairs of 23-year-old college students were asked to apply to 350 entry-level job openings in Milwaukee that had been randomly selected from a newspaper's Sunday classified section and a state-sponsored online job site. The applicants were two white students (one with a fictional criminal record and one without) and two Black students with the same profiles as the white applicants. The difference in the responses the applicants got was striking: Thirty-four percent of white students without records and 17% of white students with records received callbacks. Only 14% of Black students *without* records got callbacks, and a mere 5% of Black students with records did. Yet in a follow-up survey the managers indicated that they had no racial preference. Denial is widespread, but if people don't admit bias exists, they can't address it.

One of the issues is that traditional UB training tends to focus on extreme cases of abuse and harassment, giving employees another easy out: “I’d never do that,” they say and tune out. While it's important to cover the extremes, training should look mostly at scenarios where leaders and employees subtly exclude others or downplay their contributions—one of the most widespread and insidious forms of bias.

Microsoft's online UB training, which is also available publicly, includes videos depicting various everyday workplace scenarios. In one, the only woman on a team tries to add her views and is interrupted multiple times until another member finally notices and asks her to speak.

Highlighting common forms of bias is also helpful when addressing more-blatant discriminatory behavior. Starbucks took an approach similar to Microsoft's when designing a new antibias training in reaction to a highly publicized 2018 incident in one of its Philadelphia stores. One day in April, two African American entrepreneurs arrived at a Starbucks store for a meeting. They sat without ordering, waiting for a local businessman to join them. The store manager asked them to either place an order or leave, and then called 911 when they did not. The police arrived and arrested them. The chain's leadership responded by closing all 8,000 of its U.S. stores for half a day of UB training focused on race. During it, leaders gave concrete examples of how bias can show up in stores, such as when employees treat customers differently on the basis of their



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skin color or make assumptions about how they'll behave because of their appearance.

Focus on the potential for growth. According to the respondents in our recent survey of nearly 1,300 working adults in the United States, learning that the brain is malleable and capable of positive change is the single most effective component of antibias training. Participants need to be taught that while bias is normal, it's not acceptable or unavoidable.

To help its employees and managers grow, the Canadian energy company Suncor encourages them to write in a "reflection notebook" about any instance in which they saw themselves acting with bias. They're also asked to think about the life experiences that shaped their biases.

Microsoft's UB training prompts participants to think more deeply about the examples of bias depicted in its videos. For instance, one shows a team discussion of who is most suited to lead a project. After watching it, participants are asked to indicate which of various statements made during the discussion are valid: (1) Technical understanding is important when leading a technical project; (2) Cynthia's young children will make it harder for her to be fully committed to the project; (3) Ravi's introverted nature makes him an unsuitable project leader; and (4) Gerry's relaxed demeanor would not serve this project's goals. The participants learn that only the first statement is valid. There is no evidence that having children, being introverted, or having a relaxed demeanor negatively affects a project leader's effectiveness.

Provide examples of how to change behavior. Each section of Microsoft's training includes a best practice for overcoming bias, such as "examine your assumptions." Participants are told, "The next time you catch yourself making a judgment about someone's background or working preference, ask yourself, could this be an asset? This is a simple way of reframing your thinking about a person or a situation." The training also teaches employees that they can counteract bias when hiring or assigning projects by clearly identifying the requirements of a role before evaluating potential candidates.

At one public relations company, the chief diversity officer works with various divisions to examine practices like customer interactions and hiring, identify where

unconscious biases are prevalent, and help employees address them. Working with human resources, she found that performance reviews were biased: Women received less helpful feedback than men did. Why? The forms included a self-assessment, which managers read before filling out the feedback forms. Women, consistent with research findings, were less likely to promote themselves and were harder on themselves than men were. By eliminating self-evaluations, HR was able to reduce bias against women in managers' feedback. Examples like this are used in the company's UB training to concretely show how bias can be effectively addressed through changes in behavior.

Break stereotypes. Stereotypes we hold about ourselves and others profoundly influence our behavior. For instance, one of us (Coffman) has found that lack of confidence in their own talent leads women in fields stereotypically considered "male," like technology, to behave in ways that can jeopardize their success, such as suggesting fewer ideas, particularly when working with men, and not applying for roles for which they are qualified. But encouraging trainees to present examples that defy stereotypes can reduce bias. In one experiment by Nilanjana Dasgupta and Anthony Greenwald, students exposed to images of admired African Americans showed a weaker preference for white individuals. In another study that Dasgupta and Shaki Asgari did, female college students were less likely to view leadership and math as male domains after encountering female faculty members in those departments at their school.

Exposure to counterstereotypical information reduces prejudice and results in more-positive interpersonal interactions. Leaders of Corning, the manufacturer of high-tech glass and ceramics products, provide it as part of a broader initiative to address unconscious bias. Intersections, a learning site on Corning's internal community platform, hosts *Collective Voices*, a podcast series that showcases employees and leaders across the business discussing diversity, equity, and inclusion and sharing personal experiences. In some episodes employees and leaders talk about times they behaved in a biased manner—for example, by stereotyping a colleague because of his or her affiliation with a certain political or racial group. Their vulnerability helps others examine their own biases. Some of the stories have opened up discussions of counterstereotypical examples, such as



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women who are thriving in traditionally male roles, showing that there are ways for everyone to succeed in the organization. Since the launch of the podcast, which has become quite popular, internal surveys have revealed that employees are more comfortable talking about their mistaken views and find themselves relying less on stereotypes.

2 Create Empathy

Research shows that we have less empathy for people who seem different from us and are likely to treat them worse as a result. That's why connecting with others through empathy can improve our interactions across racial, gender, and other differences. Let's look at some ways to nurture empathy.

Offer opportunities to take the perspective of others.

We don't put ourselves in someone else's shoes naturally, much research finds, but doing so can lead to greater interest in others' welfare and more-positive relationships. In laboratory studies, instructing participants to take another person's point of view has been found to reduce bias against stigmatized groups, such as African Americans, and to suppress unconscious prejudices. In one study a group of white Americans watched clips from the movie *The Joy Luck Club* and were asked to put themselves in the place of the Chinese American heroine, June. In comparison with a control group, participants later showed less implicit prejudice toward "outgroups" (people who were not like them). During the UB training at Starbucks, attendees who were shown videos in which employees from minority groups told their stories were asked to adopt the perspective of those colleagues.

Hold small group discussions. These create opportunities for people to learn about others' views and experiences. About every seven weeks, as part of an ongoing training called the Third Place development series, Starbucks provides new guided UB learning and discussion modules, which are delivered on iPads in its stores for retail employees and on the company's intranet for the rest of the workforce. The topics are crowdsourced from leaders of different departments, including human resources, employee development, and inclusion and diversity. But employees also can suggest areas where they feel they could use more

education and support. Employees are given time off to go through each module in groups of three to five people and discuss the questions it poses. Each session is 30 minutes for baristas and other nonmanagement employees, and 60 minutes for managers and above.

Discussions can also occur virtually. On Corning's Intersections site, employees talk about issues related to inclusion in an online forum, where a moderator is available to answer questions and provide resources.

3 Encourage Interactions Among People from Different Groups

These can be a powerful antidote to bias. Research shows that white people who've had few interracial encounters often experience anxiety when interacting with Black people and try to avoid them altogether. But forming relationships with members of other groups can widen our social networks, decrease our stress around people who are different from us, and reduce our prejudices. Here are some effective methods for building them.

Expand inner circles. Training sessions themselves can help people get to know colleagues who are unlike them, even when the sessions are virtual. In our survey of nearly 1,300 working adults, respondents said they benefited from the opportunities that training offered to interact with diverse colleagues and to examine whom they had contact with most often. The success of this kind of effort is obviously tied to how diverse a workforce is in the first place. The fact that it can cause discomfort should not be a barrier. Research has shown that moderate discomfort is a critical catalyst for the introspection that can lead to more-egalitarian behavior.

At Starbucks pulse surveys and interviews with employees revealed that the discussions about the UB modules, which were open to all employees, allowed colleagues with different experiences and backgrounds to learn about one another and create new connections and made workers more empathetic.

Nurture curiosity. The natural desire to acquire new knowledge and information can reduce prejudice and discriminatory behavior, research by Gino finds. (See "The Business Case for Curiosity," September–October 2018.)





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Curiosity prompts us to get to know our colleagues better rather than make assumptions. UB training can encourage it by having people work together in diverse teams. At its UB training the multinational professional services firm EY assigns colleagues from varying cultural backgrounds to teams and encourages them to ask one another questions, find out what bias means to each person, and explore how to overcome it together.

Starbucks organizes regular sessions featuring outside speakers, from successful Black entrepreneurs to well-regarded influencers who belong to other minority groups or have disabilities. The aim is to spark interest in people whose experiences employees may not be familiar with. Attendees are invited to practice asking curious questions.

Urge employees to track their interactions. UB training should encourage people to reflect on how they spend their time at work and with whom. When they're handing out assignments, do their choices indicate bias? Whom do they gravitate toward in brainstorming sessions and spontaneous conversations?

When Gino coached a group of leaders on unconscious bias, she asked them to review their calendars to see whom they had met with in the previous month and whom they invited to meetings, and to think back about whom they called on to speak during those meetings. The data was eye-opening: People of color were not invited to meetings as often as white individuals, were called on less frequently in meetings they did attend, and met informally with their bosses less often. And when managers at a financial services firm analyzed investment opportunities and deals they'd passed on to colleagues, they found evidence of gender bias: More men than women were offered those opportunities.

4 Encourage Good Practices and Continued Learning

If leaders want their organizations to become more equitable and diverse, they need to help employees implement the lessons of UB training. Here are some measures they can encourage people to take.

Commit to improvement. UB training should offer leaders and employees alike time to thoughtfully consider their motivations for reducing bias. Some may want to

gain a reputation for always striving to be inclusive. Some might buy into an organizational goal such as better serving diverse customers by creating a diverse workforce. Or they may want to address UB simply because it's the right thing to do. No matter what the goal, choosing a specific reason for a commitment is a first step toward improvement.

Choosing to commit is easier when participants see evidence of how unconscious bias affects their work. For instance, a large company that Gino worked with showed racial bias in performance evaluations. After HR directors reviewed the data, they and the company's senior leaders committed to eliminating unfair practices.

Find a mentor and solicit feedback. We often lack a clear sense of our own bias and how it affects others. One male leader we coached learned from a trusted colleague that in meetings he frequently interrupted people—primarily women—and often attributed women's ideas to their male colleagues. Once his eyes had been opened, he began paying closer attention to how he managed meetings.

At UB training, participants might identify a mentor who could observe their behavior for bias or advise them on how to solicit feedback from others. Team members may feel more comfortable providing input anonymously or may appoint one person to monitor meetings for signs of bias. Accepting that we're biased isn't easy, but learning from feedback is key to becoming more inclusive.

Track improvement. It's crucial to hold people accountable by monitoring whether behaviors truly change over time. When the leaders at the pharmaceutical company tracked their practices, they saw differences in their promotion patterns during the two years after their UB training. Similarly, the managers at the financial services firm were more unbiased and fair in their assignment of deals after they started tracking whom they passed their deals on to.

5 Set a Broader Strategy for Broader Impact

When organizations make a broad commitment to fostering diversity, equity, and inclusion, employees' buy-in increases. In our survey of more than 500 employees, participants reported taking UB training more seriously when it was accompanied by resounding institutional support demonstrated through thoughtfulness,



People should reflect on how they spend their time at work and with whom. When they're handing out assignments, do their choices indicate bias?

time, and money. Here's how organizations can provide such support.

Build the foundations. First, organizations can collect data on the representation and dispersion of people from different groups across the business, employees' perceptions of inclusion, and where diversity-related process failures might be occurring (such as during hiring or performance reviews). That data will suggest which training topics might have the greatest impact on employees. Leaders can also establish a committee to oversee and report on progress toward diversity, equity, and inclusion goals. These endeavors will need dependable funding. At Starbucks, which has made a multiyear financial commitment to reducing bias, Molly Hill, the company's vice president of learning, development, and partner experience, says it speaks volumes that her team doesn't need to ask for a training budget every year—the money is allocated to the initiative by default.

Measure the effectiveness of UB training. This is critical to improving the training over time. It involves, first, gathering data on engagement with the training itself. Microsoft does that with participant surveys and by studying what makes employees, teams, and units most likely to consume UB training content. Starbucks similarly assesses engagement with antibias materials through pulse surveys of employees.

Second, organizations must track the outcomes they're trying to change. To promote improvements, companies like Microsoft and Corning publish demographic employment data in public reports each year. Starbucks tracks customer engagement with employees in different stores, asking whether their efforts are improving customer experiences.

Asking employees directly affected by bias to share their experiences before and after companywide UB training can also help leaders understand whether meaningful change is occurring. One way to do this would be through surveys done just before and few months after the training.

Nudge people to make better decisions. After training, organizations can establish what behavioral scientists call “nudges”—measures that prompt people to engage in new strategies. For example, before managers write performance reviews, they might be reminded to avoid giving feedback about employees' personalities. Recruiters might be asked to reflect on key job requirements before discussing

candidates. In these ways organizations can ensure that training lessons influence employees' everyday behavior.

Review and rethink policies. The leaders of Starbucks revised store policies that they believed led employees in Philadelphia to call the police on the two Black men. The company issued clear guidelines stating that everyone was welcome to spend time in its stores, with or without making a purchase. And employees facing a challenging situation were encouraged to move beyond their gut reaction by consulting a checklist, considering the context, and seeking advice from others before taking action. Store managers were taught to ask, “Would I take this action with any customer in the same circumstances?”

As Starbucks recognized, UB training alone can't stamp out bias. Systemic changes are needed as well. Leaders should revise long-standing practices that unfairly disadvantage certain groups, such as relying on unstructured interviews or self-assessments. When managers at the financial services firm realized there was a gender bias in the way they assigned deals, they instituted a regular review to ensure that it stopped happening.

LEADERS' DESIRE FOR their companies to be more diverse, equitable, and inclusive has never seemed stronger. But conventional UB training programs aren't delivering the changes they're supposed to produce. By following our blueprint, organizations can create programs that inspire people to more courageously examine and improve their behavior. By replacing superficial, one-shot training with longer-term efforts that do a better job of helping people understand their own unconscious biases and see how to overcome them and measure their progress, leaders can turn their workplaces into environments where everyone truly feels a sense of belonging and appreciation. 🧠

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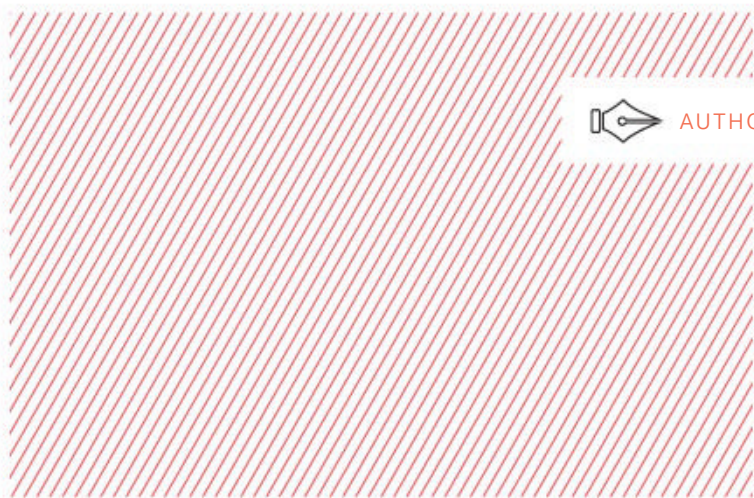
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The Net Positive Manifesto



Is the world better
off because your
company is in it?



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STRATEGY



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OCIETY'S EXPECTATIONS OF business have changed more in the past two years than in the previous 20. A pandemic, expanding and ever-more-expensive natural disasters, George Floyd's murder, attacks on democracy, and more: All moved us past a tipping point. Both practically and morally, corporate leaders can no longer

sit on the sidelines of major societal shifts or treat human and planetary issues as "someone else's problem." For their own good, companies must play an active role in solving our biggest shared challenges. The economy won't thrive unless people and the planet are thriving.

The good news is that addressing those challenges presents the greatest economic opportunity of our time. Multitrillion-dollar markets are in play across all major sectors of the economy, including building technologies, transportation, food and agriculture, and green finance. A two-year study by the Business and Sustainable Development Commission found that meeting the UN's Sustainable Development Goals, which cover everything from eliminating hunger to providing livelihoods and tackling climate change, could unlock trillions in value and create hundreds of millions of jobs this decade. The world can reap those benefits with moderate investment, especially when compared

with the cost of global disruptions from climate change (the estimated \$22 trillion loss to the global economy from the pandemic shows how costly planetary crises can be). In addition, it's never been easier or more profitable to shift a business to low-carbon operations. The core technologies of a clean economy—renewable energy, batteries, smarter AI, big data, and so on—have become radically cheaper and are being implemented at scale (90% of new energy put into the global grid in 2020 was renewable).

Companies that have embraced action on environmental, social, and governance issues are outpacing their competitors. More than 80% of ESG funds outperformed their benchmarks in 2020. Stock price is not a perfect indicator of business success, but good returns demonstrate that sustainability is not an antibusiness plot to undermine free markets (a long-held and outdated view).

Investors are a new addition to the list of stakeholders pushing for action. Financial regulators are demanding more disclosure and transparency. Business customers are setting nonnegotiable climate and diversity targets for suppliers. And the most powerful stakeholders of all may be employees—especially Millennials and Gen Zers, who seek employers that share their values. They will stage walkouts or speak up to support or criticize employer actions on social issues—as half of U.S. Millennials say they have already done.

Businesses that thrive in this new environment will look different from those of the past. Traditional corporate social responsibility and philanthropy are inadequate for our times. Leaders must rethink what a business is, how it grows and profits, what its purpose is, and how it drives change in the world. In our new book, *Net Positive: How Courageous Companies Thrive by Giving More Than They Take*, we lay out

IDEA IN BRIEF

THE PROBLEM

Current efforts by business to address planetary challenges such as climate change are inadequate.

THE SOLUTION

Corporations should strive to become net positive, improving well-being for everyone they affect—every product, operation, and stakeholder, including future generations and the planet itself.

FIRST STEPS

No company is yet net positive. To get started, firms should think about stakeholders, not just shareholders; take full ownership of all company impacts; embrace partnerships and work with critics; and rethink their approach to lobbying and other forms of advocacy.



Traditional corporate social responsibility and philanthropy are inadequate for our times. Leaders must rethink what a business is and how it drives change in the world.

the core dimensions of a business that unlocks lasting value and grows by helping the world prosper. We define a net positive company as one that “improves well-being for everyone it impacts and at all scales—every product, every operation, every region and country, and for every stakeholder, including employees, suppliers, communities, customers, and even future generations and the planet itself.”

No company has yet reached this lofty goal. But a growing number have begun the journey. Their leaders are pressuring governments to go faster on climate policy, setting goals to become carbon-positive, making ambitious commitments to racial equity, and speaking out against laws that restrict voting or infringe on the rights of LGBTQ citizens. They’re forming broad partnerships with suppliers, customers, peers, NGOs, and governments to tackle systemic issues and shared problems. The concept of “stakeholder capitalism” and the idea that business has a responsibility to society are becoming conventional wisdom in C-suites around the globe.

Those who miss this seismic shift will face a raft of existential risks. The economics of business as usual will not favor them, society won’t accept them, and younger generations won’t work for them. We offer a perspective from Unilever, which one of us (Paul) led for a decade. The consumer giant is widely acknowledged as a leader in the shift to net positive: For 11 years straight, sustainability experts have ranked it number one in the world. That success was not at odds with financial performance; in fact, it drove profits and growth. Across Paul’s tenure, Unilever’s total shareholder return was close to 300%—well above that of its peers.

Unilever is not alone. Virtually all the world’s 500 largest companies have set energy or carbon targets, for example, and the rhetoric from leaders is shifting. When the CEO of Walmart talks about becoming a “regenerative company,” you know something is up. Rhetoric is not action, of course, and too few companies are shooting high enough, but the work has begun. Many, however, seem to be playing to not lose. This article is about playing to win.

We see four critical paths businesses can take to thrive today and win in the future. They can:

- operate first in service of multiple stakeholders—which *then* benefits investors (as opposed to putting shareholders above all others)
- take full ownership of all company impacts

- embrace deep partnerships, even with critics
 - tackle systemic challenges by rethinking advocacy and the relationship with governments
- We’ll explore the paths one by one.

SERVE STAKEHOLDERS, THEN SHAREHOLDERS

The economist Milton Friedman famously wrote that the sole purpose of business is to generate shareholder value. For 50 years that doctrine created tremendous growth in material well-being—but at a severe cost to equality and the planet. We must address those costs or risk all that we have gained.

To move forward to something better, we can draw from the past. Before the era of shareholder obsession, companies were multistakeholder by nature. For example, in 1943 Johnson & Johnson published its Credo, which put patients, doctors, and nurses first, followed by mothers and fathers, business partners, employees, and communities—and only then would the company serve stockholders, whom J&J said should earn a “fair return” (note that it wasn’t promising the maximum return possible).

A net positive company rewards investors, but as a *result* of running a business that serves others, not as a primary goal. That shift in focus can create tension with traditional short-term shareholders. At Unilever, Paul’s solution was to tell investors—when he had been on the job all of three weeks—that he would no longer provide quarterly reporting or guidance. The company would pursue long-term value while maintaining intense business discipline. If investors didn’t like it, they could take their money elsewhere.

We are not saying businesses should create value for everyone else while crossing their fingers and hoping investors do well too. We believe a business that serves the world does better over time. The value it builds compounds, and investors see healthy returns. And if done skillfully, those efforts aren’t entirely at the expense of short-term returns.

Early in Paul’s tenure at Unilever, to bring purpose and broader thinking to the organization, he launched the Unilever Sustainable Living Plan. That groundbreaking initiative, which has been emulated many times, set aggressive targets to improve a billion people’s lives, slash the firm’s environmental impact in half, and improve livelihoods for millions of women and smallholders in the supply chain.



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Those were company-level goals; Unilever also made a commitment to drive business results by serving multiple stakeholders at the brand level. The largest of its “purpose-led” brand initiatives is the global handwashing campaign led by the company’s Lifebuoy soap. Working closely with UNICEF, Lifebuoy has taught hundreds of millions of children and new mothers about the health benefits of washing hands, helping to avert millions of deaths from easily preventable diseases.

Such efforts may sound like philanthropy, but they’re about businesses filling unmet needs. In one of Paul’s earliest meetings as CEO, the executive director of UNICEF asked him to donate soap to neonatal kits, to help reduce the rate of death in childbirth. Paul said he was happy to donate bars, but they would be Lifebuoy-branded, not generic. A net positive company can help solve a social problem *and* see brand and sales benefits. The two goals are not at odds.

For years Unilever has made its larger mission an integral part of its brands and messaging. Employees in the Lifebuoy business are not just selling soap; they’re helping save lives. Business results have followed. More than a century after its founding, Lifebuoy was not a vibrant business. But in the 2010s, as the handwashing program rapidly expanded, its revenue started growing at a double-digit percentage rate—a torrid pace for soap. It’s now one of the company’s 13 brands that bring in more than a billion euros annually. Putting purpose at the core of your strategy drives growth. You reap profits *through* purpose.

TAKE OWNERSHIP OF ALL COMPANY IMPACTS

Many companies have long operated with little regard for the social and environmental consequences of their actions, especially those they see as beyond their control. They have outsourced not only their supply chains, logistics, and investments but also their sense of responsibility. The focus has been on externalizing costs and internalizing profits.

Every sector has unintended consequences and ripples, and business leaders either choose to face them or willfully ignore them. For example, tech companies connect billions of people and bring all human knowledge to our fingertips; new technologies will play a leading role in solving our biggest challenges. But those benefits have come at great cost.

Misinformation has spread through social media like wildfire, undermining truth, science, and human bonds. It has slowed the fights against the pandemic and climate change. Easily spread lies on Facebook and other platforms have subverted democracy in the United States and elsewhere and have mainstreamed extremist views and radical content. Tech giants are unimaginably profitable in part because their products create divisiveness. Research shows that their algorithms purposely put inflammatory stories in front of people to enrage them, which makes them more inclined to click.

Tech isn’t the only offender. For instance, every sector relies on cheap fossil fuels, but nobody has paid for the climate-destabilizing impacts of their carbon emissions. Similarly, businesses in many sectors draw on cheap labor—even slave labor—in supply chains around the world.

Taking full ownership of all your impacts is a revolutionary act; after all, aggressively *not* taking ownership helped drive short-term profits over the past century. But an expanded view of ownership has been building for years. After high-profile incidents of child labor in supply chains, for example, many sectors implemented codes of conduct that partly address the issue. Serious problems remain, but the days of pretending they don’t exist are over.

Clearly, companies must think more broadly about how they affect the world. New tools can help. The Greenhouse Gas Protocol provides standards for taking responsibility for carbon output in three “scopes” of emissions: (1) those from fossil fuels burned on-site, (2) those from the generation of electricity purchased from the grid, and (3) those from the operations of value chain partners (suppliers, logistics, and customers). A fast-growing number of companies are including scope 3 emissions in their measurements and goals, sometimes in response to the demands of activist investors.

The scopes are just the beginning. Environmental and social impacts extend far beyond what traditional accounting methods can measure. Stakeholders increasingly expect companies to understand *all* the ways they affect people and the planet. If your firm has aggressive carbon-reduction goals but you lobby against policies to reduce emissions, what’s your real impact on climate? It’s not net positive, no matter how well you manage your own footprint.

At the largest scale of impact, the marketing efforts of many companies, including Unilever, have helped create a consumption-based society that overuses resources and reinforces damaging stereotypes. Businesses influence how carbon-intensive our lives are by shaping how we eat, get around, communicate, use shared resources, and more—and those impacts are increasingly being laid at their feet.

Some big brands are holding themselves to account for their wider impacts and acting to reduce them. IKEA makes more energy from renewables than it needs and sells some



When companies partner with peers on low-risk efforts that make everyone more efficient and sustainable, they create space for tackling harder, more systemic problems.

back to the grid—more than zeroing out its own footprint. Apple helped fund a technology joint venture with the mining giants Rio Tinto and Alcoa to manufacture aluminum in a way that slashes energy use, produces no carbon, and, at scale, should be cheaper than conventional methods. The new process not only cuts Apple's supply chain emissions but also creates an option others can take advantage of; for example, Audi is now using that low-carbon aluminum in a new electric vehicle. Those are net positive ripples.

The idea of taking full responsibility makes many business leaders uncomfortable. Are energy and auto executives personally driving climate change? Should apparel and food leaders be on the hook for child labor in the supply chain? Should the heads of social media outlets be held accountable for attempted coups and loss of faith in the voting process?

Yes and no. No organization, no matter how large or powerful, completely owns those problems or could possibly solve them alone. But it's absurd to abdicate all accountability. As the scholar Rabbi Tarfon wrote nearly 2,000 years ago, "It is not your responsibility to finish the work [of perfecting the world], but you are not free to desist from it either."

EMBRACE PARTNERSHIPS AND WORK WITH YOUR CRITICS

The Consumer Goods Forum brings together over 400 of the world's largest consumer goods retailers and manufacturers to collaborate on issues such as reducing food waste, tackling human rights abuses in supply chains, developing sustainable packaging, and avoiding deforestation. The group, and a predecessor organization with similar members, has worked to standardize the sizes of shipping pallets. An operational change like that may sound minor, but with more pallets than people in the world, and with billions of shipments coming in and out of factories, distribution centers, and stores, efficiencies add up. With standard sizes, companies can pack trucks more than 50% more tightly, saving money and fuel and reducing carbon emissions.

When companies partner with peers on low-risk efforts that make everyone more efficient and sustainable, they create space for tackling harder, more systemic problems. Successful partnerships lessen the perceived risk of taking bold action. And because they improve the economics for

all, such collaborations help counter the first-mover disadvantage, which often stops individual companies from doing the right but harder thing. For instance, in 2019 the apparel sector launched the Fashion Pact. It was aided by Paul's company, Imagine, which facilitates industrywide cooperation on the burning issues of climate change, environmental degradation, and inequality. The pact drives members to set science-based carbon goals, seek 100% renewable energy by 2030, get out of single-use plastics, and develop biodiversity plans to increase the use of regenerative agriculture, which sequesters carbon rather than releasing it. Managing those issues together improves the resilience of the fashion industry as a whole and lowers everyone's risk; collective, courageous action pays off. Of course, pacts are not acts, and there is a long way to go, but it's impossible to envision companies moving as far, or as quickly, in piecemeal fashion.

Industry partnerships often need civil society's help, which means doing something companies find uncomfortable: working with critics. NGOs can make life difficult; for example, Greenpeace is known for climbing corporate buildings to protest environmental wrongdoing. But pressure groups closely follow technical issues, such as alternatives to plastics, and often have deep knowledge. It's important to distinguish between productive critics and cynics who just want to undermine business. The latter don't trust business to do anything right, let alone serve the world. But helpful skeptics bring good ideas to the table, serve as an early warning system for new problems, and can make your business better—if you don't get defensive.

Under Paul's leadership, Unilever opened up its Vietnamese business to an audit of human rights issues by Oxfam. The company invited the nonprofit into its facilities with no restrictions and allowed it to issue a stand-alone report on its findings. It knew that attending to human rights is more than a matter of doing the moral thing; a focus on people and their well-being also guards against potentially costly reputational and operational risks. Executives at Unilever found it unnerving to be transparent about such a sensitive issue with a skeptical NGO. But the report helped them identify ways to improve the company's human rights performance that they hadn't thought of on their own.

Solving tough issues together builds trust and fosters partnership. And isn't it wiser to have critics in the room,



STRATEGY

working productively, than outside the building, holding demonstrations and hanging banners in protest?

CHANGE SYSTEMS WITH NET POSITIVE ADVOCACY

The partnerships we've discussed so far generally solve problems within the current system. But to tackle humanity's biggest challenges and unlock greater business and societal value, we need to change the system itself—to work *on* the forest, as it were, not *in* the forest. For that effort, all three legs of the societal stool—the for-profit sector, civil society (such as consumers, nonprofits, and other advocacy groups), and government—will need to be in the room.

The traditional relationships among those groups must evolve. Companies have long viewed “government relations” as a way to resist regulation or fight for tax breaks and other special treatment. We propose, instead, that businesses approach governments openly and transparently, to improve the rules, help policy makers reach *their* goals, and solve larger problems for the benefit of all. We call this approach *net positive advocacy*.

For example, Unilever has maintained a consistent presence in Brussels in order to stay involved in EU policy making. It has offered its deep knowledge on a range of issues important to the Continent, including climate change, food security, hygiene and sanitation, and the empowerment of women. Policy makers have said that whereas most companies come in only reactively, to complain or ask for a hand-out, Unilever meets with them proactively, trying to help Europe thrive. Working for the benefit of all builds trust and earns a seat at the table.

And consider the actions of Unilever Russia. After building its own recycling infrastructure to increase the availability of recycled plastics for use in packaging, the company wanted to scale the effort up and improve its economics. But Russia's regulations weren't helping. The country charged manufacturers for each ton of plastic used, no matter the source. So the Unilever Russia team worked with academics to propose a policy that would incentivize the use of better materials: basing fees not on weight but on the *type* of plastic used, with lower fees for recycled or sustainable materials. In a traditional lobbying approach, Unilever would have asked for tax breaks or write-downs to pay for its investments in recycling

infrastructure—measures that would help the immediate bottom line and provide a short-term competitive advantage but would not solve the systemic problems of the cost and availability of recycled materials. Net positive advocacy is not selfless; Unilever benefits from a larger recycling system with lower costs. So does every other firm in the country—a scale often needed to achieve systemic change.

Sometimes large firms can foster systemic change through the audacity of their actions alone. For instance, Microsoft has pledged to be carbon-negative by 2030, meaning that it will remove at least as much carbon from the atmosphere as it emits. The company will also, by 2050, remove sufficient carbon to compensate for all its emissions since its founding, in 1975. Its retroactive carbon-neutrality pledge—the first we're aware of—has spurred it to invest in carbon sequestration projects, such as technology that buries the element in geologic formations far underground. Carbon capture is a nascent industry, but it has the potential to be a game changer for efforts to meet climate targets—and the software giant is driving systemic change by helping new technologies get to scale.

Google is attacking the problem from a different angle, having set an unusual “24/7” goal. By 2030 it wants to be operating carbon-free every hour—not offsetting emissions by building renewables in a different part of the grid, as lots of companies do, but operating truly carbon-free. That means using only renewables and energy storage on-site; if the company plugs into a grid at all, that grid will have to be clean. Rather than “just” being 100% renewable—a commitment hundreds of companies have now made—Google is seeking systemic change. It has said that its 24/7 goal “encourages full-scale transformation of electric grids.”

Achieving ambitious goals like these demands broad cooperation. Transforming energy systems requires bringing together policy makers, utility commissions, NGOs, communities, and big energy buyers. Companies will need to advocate for policies that accelerate investment in clean energy, storage, and the grid itself, which will expand everyone's options. Net positive companies propose solutions rather than wait for (or complain about) regulations that tell them what to do. They advocate for broad answers to shared problems, reaping the benefits along with everyone else. The system is healthier and stronger for their efforts.



Net positive companies propose solutions rather than wait for (or complain about) regulations that tell them what to do. The system is healthier and stronger for their efforts.



NET POSITIVE PURPOSE

All this may sound like tough work—and it is. One thing makes it easier: purpose. When you know why your business exists and when that purpose reflects your values, becoming net positive is a natural step—even an inevitable one.

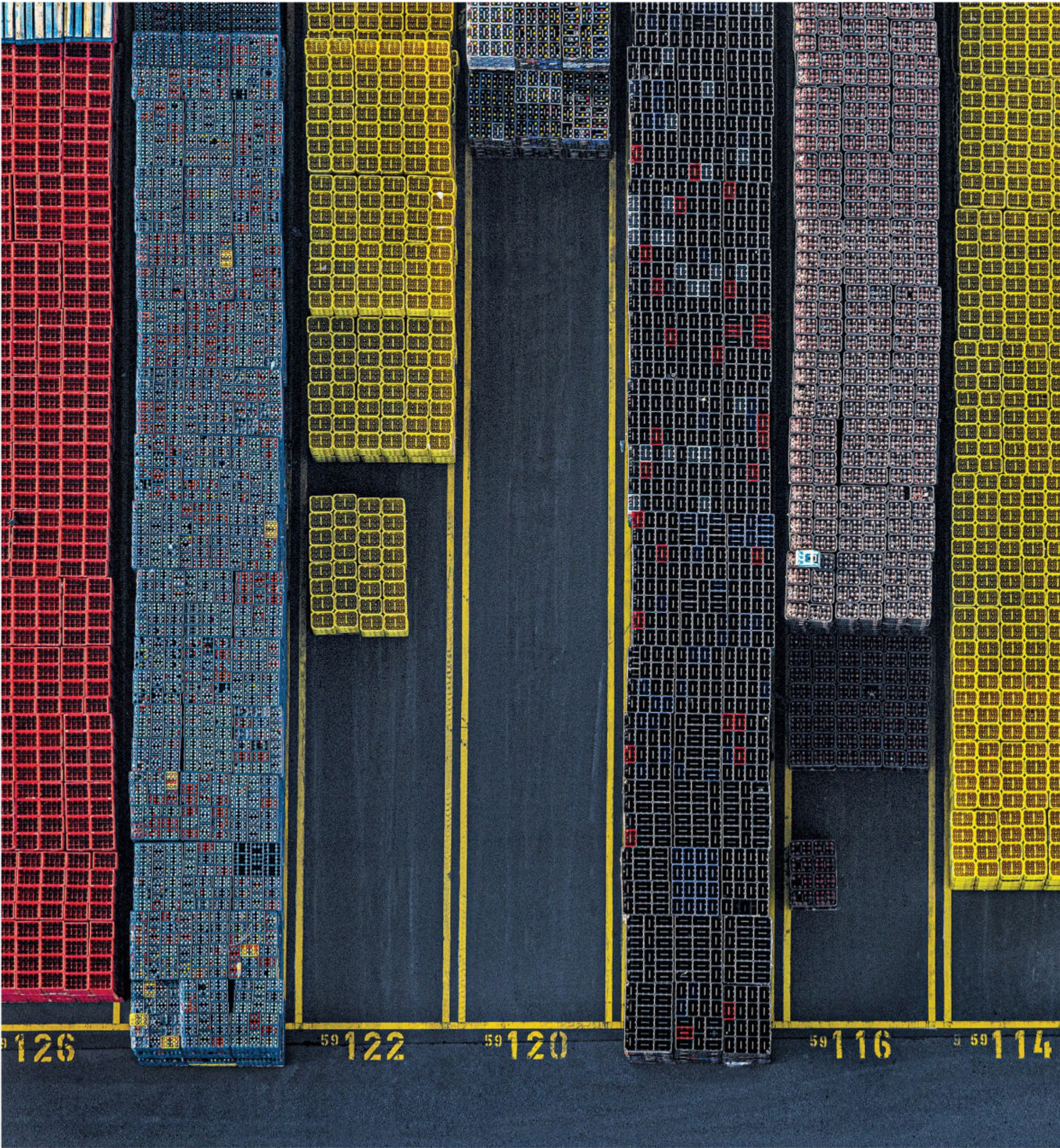
Unilever's first mission statement, from the 1890s, was “to make cleanliness commonplace and to lessen work for women.” The Unilever Sustainable Living Plan, launched 120 years later, vowed “to make sustainable living commonplace”—an expanded purpose that's grounded solidly in the original vision of serving people. Not every company can draw a clear line from founding to the present, but all have a reason for being. Unearthing that reason can inspire you.

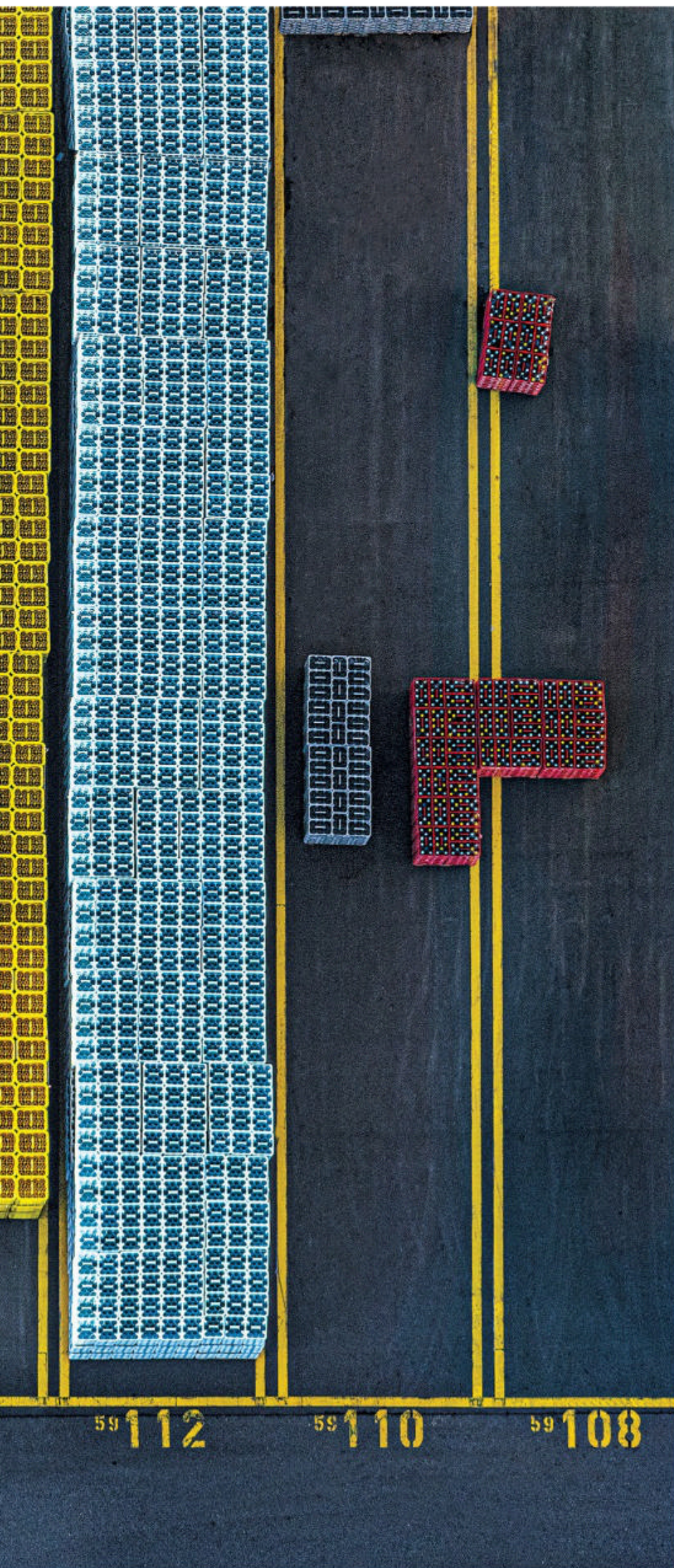
Heading toward net positive does not mean being perfect or doing everything at once. There will be short-term trade-offs in service of larger goals. A company might build a facility to expand the business and serve a community by providing jobs and enhancing livelihoods. But the region might have limited renewable energy capacity, requiring the company to take a short-term step back from its net-zero carbon goal. That's OK, as long as the work continues—almost always with partners—to move all dimensions of the business toward positive outcomes. (In this case, that would mean helping design policies to add renewables to the grid.)

The world's challenges are great, and they cannot be solved without unleashing the vast human, financial, and innovative resources of business. We need the willpower to change how business is conducted and to proactively choose to improve well-being for all. The net positive model allows companies to thrive because of their efforts to serve the world. Business leaders today face an essential question: Is the world better off because we're in it?  **HBR Reprint** R2105J



PAUL POLMAN is a cofounder and the chair of Imagine, a for-benefit organization and foundation that mobilizes businesses around the UN Global Goals. He was the CEO of Unilever for 10 years. **ANDREW WINSTON** is a speaker, writer, and adviser, helping business leaders build companies that thrive by serving the world. They are the coauthors of *Net Positive: How Courageous Companies Thrive by Giving More Than They Take* (Harvard Business Review Press, 2021), from which this article is adapted.





PHOTOGRAPHER BERNHARD LANG



SUPPLY CHAIN

A Simpler Way to Modernize Your Supply Chain

How to spend less and accomplish more



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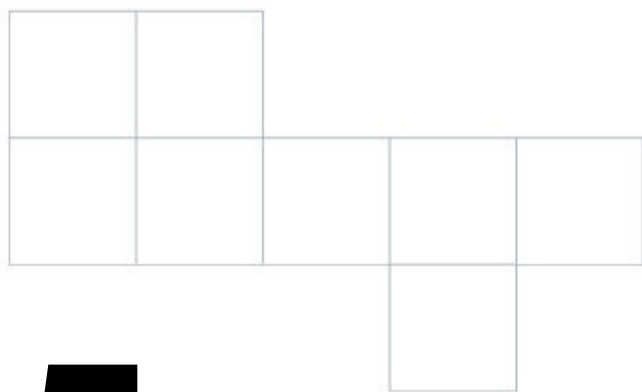


SUPPLY CHAIN



ABOUT THE ART

Bernhard Lang's aerial shots of a beverage production yard explore the repetition and geometry found in everyday life.



Most

executives believe that digitizing a major corporation's supply chain costs tens of millions of dollars. The assumption is that it will be a massive three- to five-year transformation effort—requiring major investments in cloud technology, the installation of RFID tags and readers on every product container and in every facility, the deployment of 3D-printing and robotics technologies, and new instruments on machines on the shop floor to monitor their performance and condition. All that is necessary, the thinking goes, to break down the walls between functional areas and create an integrated supply chain that provides a competitive advantage.

But in our consulting work for a number of companies, we've discovered an alternative. The experiences of these

firms—which include a global fashion retailer, a large manufacturer of consumer packaged goods (CPG), a global appliance maker, and a high-tech company that produces PCs, tablets, and workstations—demonstrate that it's possible to reap substantial benefits by spending a few million dollars on a supply chain modernization that takes 12 to 24 months. In these more moderate efforts firms assemble readily available data; use advanced analytics to understand and predict customers' and suppliers' behavior; optimize inventory, production, and procurement decision-making to cut costs and improve responsiveness; and add some automation to revamp existing processes and introduce new ones.

The secret to the success of this approach lies in three initiatives: In the first firms replace consensus forecasts with a unified view of demand. In the second they move away from a one-size-fits-all supply chain strategy to a segmented strategy. In the third they create a single plan to continually balance supply and demand and identify and respond to deviations or disruptions.

Executed well, these initiatives lead to lower supply chain costs—and higher revenue because of fewer stock-outs and improved service levels (the proportion of orders delivered on time and in full). Equally important, they enable companies to increase customer retention. At the fashion retailer, they helped to boost market share by more than 28% and double operating profit in just three years. The operating and financial gains from the CPG company's initiative paid for its cost in just two years. The high-tech firm saw a 10% to 30% improvement in service levels. And the appliance maker realized a 20% increase in revenue, raised the proportion of

IDEA IN BRIEF

THE CONVENTIONAL WISDOM

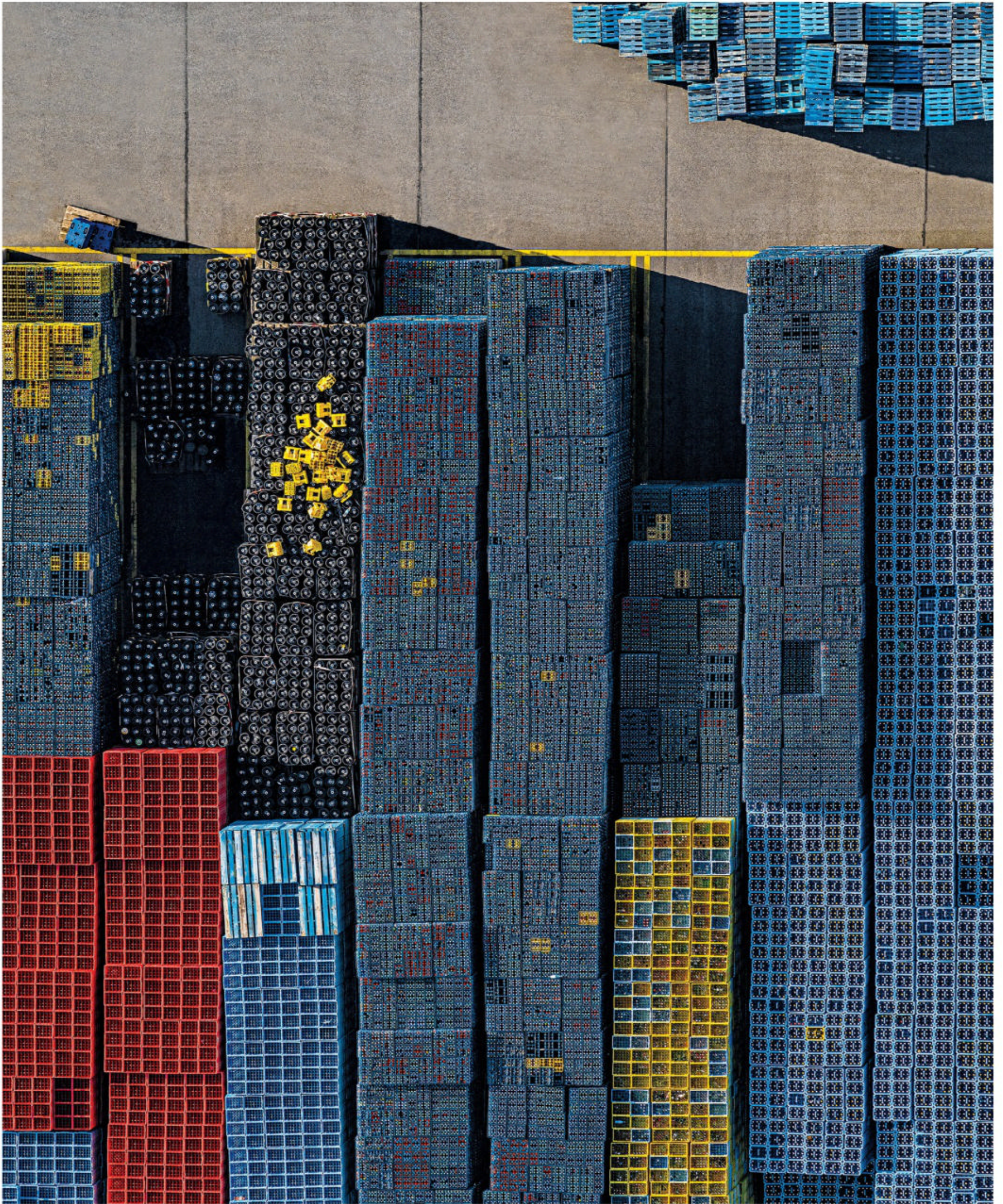
Digitizing a company's system for managing its supply chain is a megatransformation project that takes three to five years and costs tens of millions of dollars.

THE REALITY

There is an alternative: Substantial benefits can be reaped from a modernization effort that takes 12 to 24 months and costs a few million dollars.

WHAT IT ENTAILS

Assembling readily available data; using advanced analytics to understand and predict customers' and suppliers' behavior and to optimize inventory, production, and procurement decision-making; and adding some automation to revamp existing processes and introduce new ones.





SUPPLY CHAIN



More-accurate order forecasts clearly translate into a more effective supply plan, which reduces lost sales.

customers to whom it could provide one-day delivery from 70% to 90%, and cut its operating costs by 3% to 4%.

In this article we'll focus on the CPG manufacturer's implementation of the approach. It's a particularly instructive case because of the extraordinary challenges the company faced in addressing the deficiencies of its existing system, which included multiple and time-consuming manual processes, excess inventory, and a large amount of expired and damaged products.

BUILDING A UNIFIED VIEW OF DEMAND

The journey starts by rethinking the demand-planning process. Traditional approaches employ consensus forecasting, in which each function—operations, finance, sales, and trade (which is responsible for marketing, promotions, discounts, and so on)—uses standard statistical techniques, historical sales data, and some external data to generate its own forecast. Then all the functions get together and hash out a compromise uniform forecast.

That process has two drawbacks. First, it takes a long time—typically four to five weeks—to generate the various forecasts and reach a consensus that satisfies all business requirements. By that time the sales data used is old. Second, rather than agreeing on the data and having the analytics produce a single forecast, the people involved typically focus on finding a balance between conflicting forecasts and rely on gut feelings about what drives sales, revenue, and margins.

A much better way to generate a unified view of demand is to start with the sets of data that all participants agree will yield the most accurate picture. The CPG manufacturer, for example, chose four kinds:

- internal data on shipments to retailers, prices, discounts, promotions, and various product characteristics
- data on consumer demand, which can be accessed through retailers' point-of-sale technology or provided by companies such as IRI and Nielsen
- macroeconomic information—including quarterly GDP, the Purchasing Managers' Index, the Consumer Price Index, and unemployment and inflation rates—that helps explain consumer behavior, seasonality, and trends
- external data on other factors that can indicate or affect demand, such as web searches, social media mentions of

products, average temperature, precipitation, holidays, and competitors' prices

Using such data and advanced analytics, firms can set up an automated five-step circular process that generates supply, financial, and trade plans for the next 50 to 80 weeks—the planning horizon for most companies. (See the exhibit “Five Steps to a Better, Cheaper Supply Chain.”) Here's what that process looks like at the CPG manufacturer:

First, trade-planning information—about future promotions, discounts, and marketing investments—is combined with consumer, macroeconomic, and external data to generate a market demand forecast by SKU and retailer for each week of the entire horizon. From what we've observed, most CPG companies have never tried to predict demand at such a granular level.

Second, the demand forecast for each retailer is combined with historical data on the company's shipments to that retailer to generate a weekly forecast of the retailer's orders of each SKU for the horizon.

Third, the company aggregates all the order forecasts and converts them into a feasible supply plan. The plan considers available resources, including inventories of raw materials and finished goods; manufacturing capacity constraints; and market targets (say, for increased sales of a product category at a given retailer-region combination). It also aims to achieve certain performance goals. The CPG firm focused on minimizing total supply chain costs, but the chosen objective will vary from firm to firm. At some companies, for instance, it may be to maximize revenue or the amount of supplies produced.

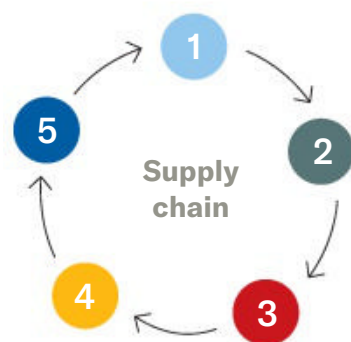
The fourth step is to use the weekly SKU supply plan for all retailers to generate revenue and gross margin forecasts at the brand level for every month of the planning horizon.

The fifth step is to compare that financial forecast with the firm's business objectives. A gap between the two may trigger a change in the trade plan—for example, the addition of more-aggressive discounts or increased investments in marketing to stimulate sales.

When they were considering the adoption of this new process, the CPG firm's managers raised a number of questions—which are representative of the kinds of concerns most executives express about our approach. Let's examine them one by one.

Five Steps to a Better, Cheaper Supply Chain

Using advanced analytics, firms can set up an automated five-step circular process that generates supply, financial, and trade plans for the next 50 to 80 weeks.



STEP 1

The market demand forecast

Trade-planning information—about promotions, discounts, and marketing—is combined with consumer and macroeconomic data to forecast weekly market demand for each SKU and retailer.

STEP 2

The retailer order forecast

The demand forecast for each retailer is combined with data on past shipments to it to generate a weekly forecast of the retailer's orders of each SKU.

STEP 3

The supply plan

The order forecasts are combined with information on available resources (including inventories of raw materials and finished goods), manufacturing capacity, and market targets to create a supply plan.

STEP 4

The financial plan

The weekly supply plan is converted into monthly revenue and gross margin forecasts at the brand level.

STEP 5

The alignment of plans and goals

The financial plan is compared with the firm's business objectives. If gaps are identified, the firm may adjust the trade plan—by, for example, adding more discounts or increased investments in marketing—and start the cycle again.

What degree of forecast accuracy can the process achieve? Research has proved that variability in customer demand is significantly lower than variability in retail orders—a reality that underlies the well-known bullwhip effect in supply chains. This implies that predicting consumption should be easier than predicting retail orders, and indeed, the accuracy of the CPG firm's forecast for market demand is quite high. At any moment the demand forecasts at the SKU, week, and retailer level for five to eight weeks out have proved to be 85% accurate.

Combining the more exact consumption forecast with historical retail orders allowed the CPG company to improve its forecast of retailers' future orders. The accuracy of the weekly order forecasts has been 15 to 20 percentage points higher than that of the standard, consensus-based forecasts the company previously used. And more-accurate order, or shipment, forecasts clearly translate into a more effective supply plan, which reduces lost sales—therefore boosting revenue—and improves service levels and the customer experience.

Finally, because the inputs into it are more accurate, so is the financial plan. In multiple implementations of this approach at several CPG companies, the accuracy of the financial forecast made at the beginning of a given month for the next month rose to 95% to 97%.

Will we be able to understand what drives the behavioral and other changes the plans predict? This question is probably the most critical. Indeed, in our experience, virtually all executives are reluctant to blindly follow the recommendations of a black box developed by data scientists. They rightly want to be able to interpret and explain the output of the demand-forecasting process.

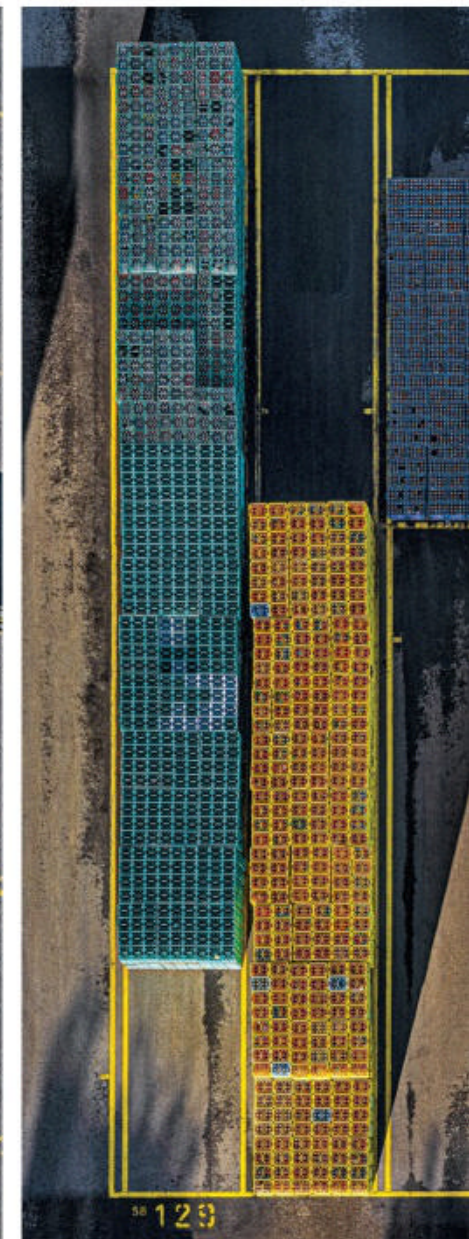
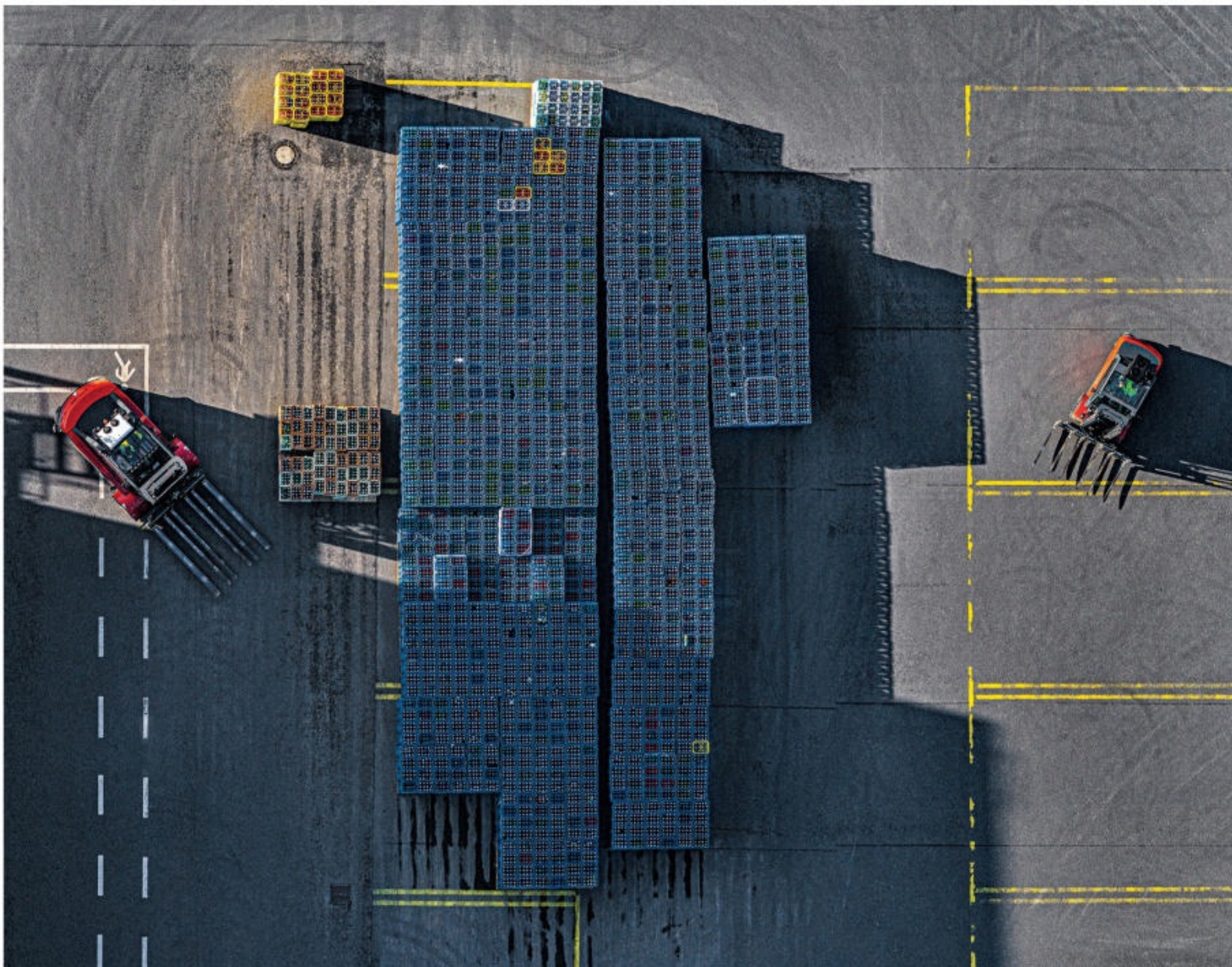
For instance, is an increase or decrease due to competitors' behavior, cannibalization across products, promotions

and discounts, or merely a special event or holiday? The good news is that the analytic technology today is mature enough to allow a single SKU weekly forecast to be decomposed into its basic components. This is done by explicitly modeling the data as a combination of key variables (competitors' behavior and so on) and estimating the contribution of each one to the forecast.

Executives also want to know the reasons why, say, the forecast generated last week is different from the one generated this week. This, too, is information that today's analytic technology can provide, by comparing the input data used to generate each of the forecasts.

Last, executives want to understand why forecasts and actual sales sometimes deviate. At the CPG firm the answer is that sales are affected by the way pricing, promotion, discounts, and inventory decisions are executed by retailers—a dimension that the manufacturer's planning team can't see. For instance, the forecast might be off when a retailer experiences operational challenges in moving inventory onto the shelf or in implementing promotions or discounts according to plan. Information about the retailer's inventory and prices paid by consumers at the cash register can reveal these problems, but in our experience most retailers don't provide it to their CPG suppliers. Thus, at the CPG firm any significant gap between the forecast and actual sales triggers an investigation of the reason for the difference.

How can we ensure that all the functions follow the new approach? The answer is to establish a forecast center of excellence that brings together people from the various functions, information technologists, and data scientists. Their role will be to agree on the data to be used and let the analytics generate the forecasts and the supply plan according to the five-step process.



How frequently should we run this process? Here, the answer depends on the market cycles of the various businesses and brands. For most businesses the demand forecast, retailer order forecast, and supply plan should be updated weekly or biweekly, while the financial forecast and the comparison with the firm's objectives should be done monthly. But there are clear exceptions. Some of the CPG manufacturer's products have short life cycles of only six or seven weeks. In such cases companies need to update the demand forecast, retailer order forecast, and supply plan twice a week. (The same is true for makers of fashion products, whose selling seasons last no more than 10 or 11 weeks.)

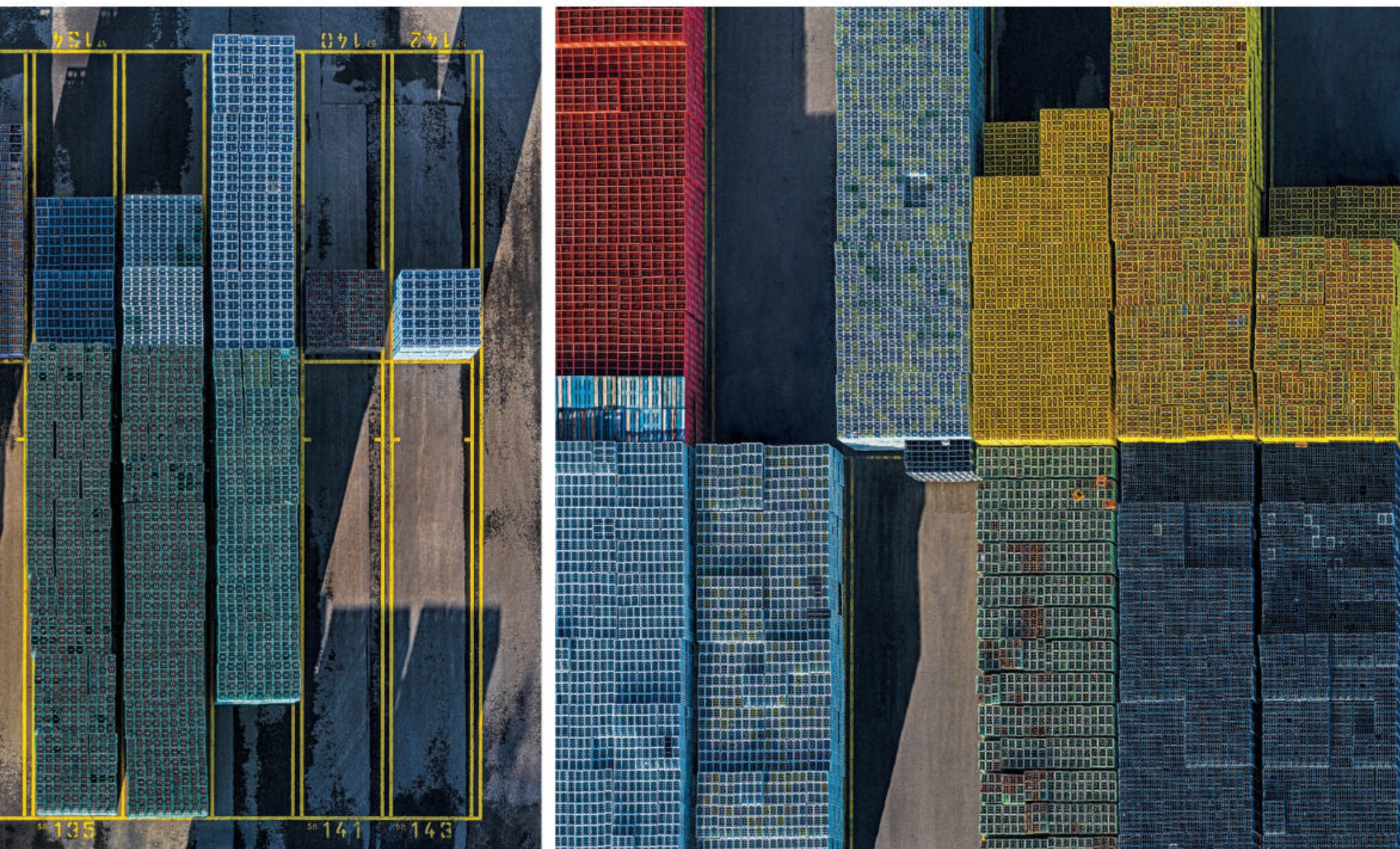
REDEFINING THE SUPPLY CHAIN STRATEGY

Traditional supply chain strategies have often focused on either operational efficiency or responsiveness. When operational efficiency is the priority, a firm strives to squeeze as much cost out of the supply chain as possible, and that goal drives supplier selection, manufacturing strategies, product

design and distribution, and logistics. Typically, production and distribution decisions are based on long-term forecasts, inventories of finished goods are located close to customer demand, and components are often sourced from low-cost countries.

The objective of a responsive strategy is to compete on time to market, satisfy demand quickly, and eliminate stock-outs. Manufacturing or product assembly is based on actual orders rather than forecasts; products may be customized; inventories of components are maximized but inventories of finished goods are minimized; and speed is prioritized over cost in decisions about sourcing and transportation.

Although seasoned operations and supply chain executives understand the difference between efficiency and responsiveness, many are nonetheless confused about when to apply each strategy. That's because different products have different characteristics, with some requiring a strategy focused on efficiency, some a strategy focused on responsiveness, and some a hybrid approach. Until recently, executives



didn't have the tools to segment products and decide which strategy was appropriate for a particular segment. But that has changed, thanks to digitization and analytics.

The CPG manufacturer began by exploring variations in sales data, focusing on products' sales volatility, volume, and profit margin, because each is directly related to risks associated with stock-outs, service levels, inventory, and transportation. The higher sales volatility is, the lower the forecast accuracy, and the riskier the product. That in turn translates into frequent stock-outs and lower service levels. Similarly, the higher a product's profit margin is, the higher the risk is, since missing an order will have a bigger impact on the bottom line. Volume, in contrast, is inversely proportional to risk—that is, the higher the volume, the lower the impact of missing an order, and the lower the risk. These relationships are consistent with those we've seen at other CPG and retail companies, though sometimes other companies focus on price or product cost rather than product margin, depending on which one is more stable and as a result easier to apply.

The analysis revealed that the CPG company had four product segments, although other companies may have more segments given their products' characteristics. Each segment required a different supply chain strategy. (See the exhibit "The CPG Firm's Segmented Strategy for Supplying Retailers.") The first segment comprises products characterized by high volatility. Because their stock-out, service-level, and inventory risks are high, they require a responsive supply chain strategy. Finished-goods inventories for them should be located in central distribution centers. Each center will be responsible for many retail outlets, which allows a company to aggregate demand, improve forecast accuracy, and reduce the inventories needed to supply the retailers collectively while maintaining high service levels. Because fast delivery is critical, these products are often shipped through cross-dock regional facilities—at which items from incoming large trucks are reloaded onto outbound smaller trucks with no storage in between.

The second segment comprises products with high volume and low volatility, which require an efficiency strategy.



SUPPLY CHAIN

In their case, forecasts are reliable, and managing transportation costs is important. Because of this, the products are stored in regional warehouses close to customers, and inventory is replenished on a fixed schedule. That allows a company to fully load trucks taking products from manufacturing facilities to regional warehouses, which keeps transportation expenses down.

The remaining two segments are both characterized by conflicting drivers: low demand volatility (which suggests that an efficiency strategy would be best) and low product volume (which alone would call for a responsive strategy). What distinguishes these two segments are product margins.

Let's look at the high-margin ones first. Because these products are riskier, many of them are stored at both centralized locations and regional warehouses and are replenished on the basis of actual store sales. That strategy allows a firm to strike a balance between efficiency and responsiveness, though it leans toward responsiveness.

Low-volatility, low-volume, low-margin products, in contrast, call for a hybrid strategy that leans toward efficiency. Indeed, because the risks and cost of holding inventory are low while demand is predictable, a firm can ship these products on fully loaded trucks to regional warehouses close to its customers, supply them from those locations, and minimize transportation costs.

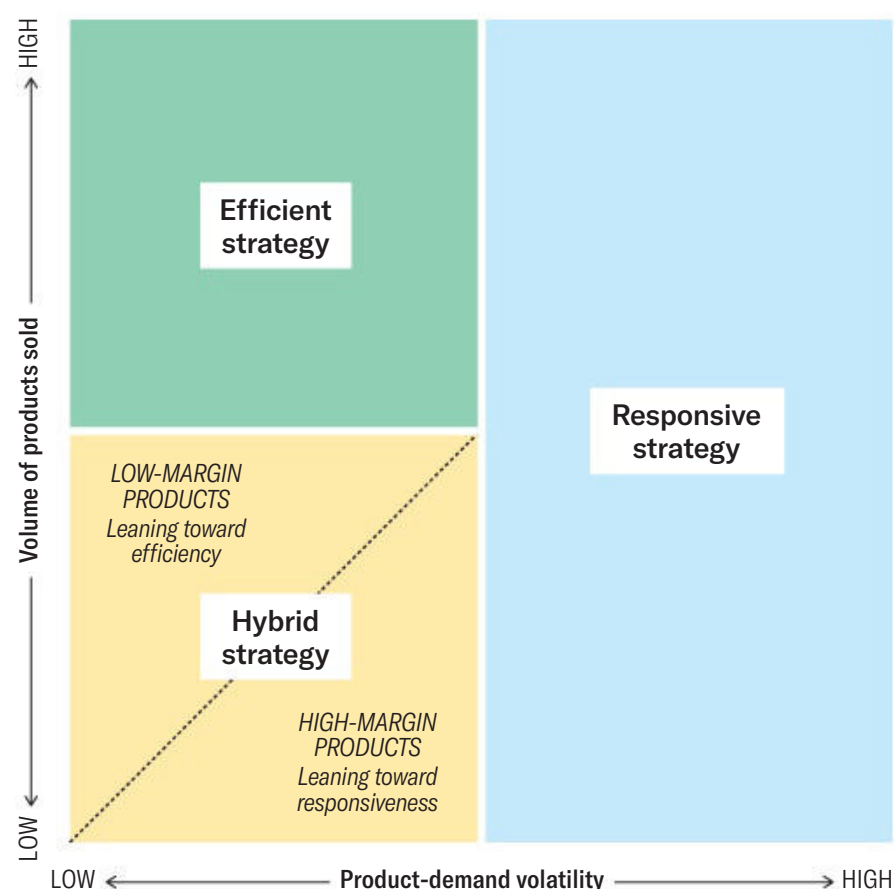
Once a company has done the segmentation, it needs to develop detailed sourcing, manufacturing, and logistics strategies. One objective should be to identify synergies across the segments that will allow the firm to benefit from economies of scale. They can be achieved by leveraging volume across segments to reduce procurement costs; sharing capacity and infrastructure in manufacturing and logistics; and consolidating demand and supply information for better planning and execution. We'll now look in more detail at that last activity.

BALANCING SUPPLY AND DEMAND

An important supply chain management process that has been applied since the mid-1980s is sales and operations planning (S&OP). It continually balances supply and demand, and historically it has called for managers launching new products and leaders from manufacturing and

The CPG Firm's Segmented Strategy for Supplying Retailers

An analysis of data on sales volatility, volume, and profit margins revealed that the consumer products manufacturer had four segments of products. Each required a different supply chain strategy: a responsive one prioritizing speed; an efficient one prioritizing low costs; or a hybrid one leaning toward either efficiency or responsiveness.



distribution to come together and agree to a single plan. Typically, it involves analysis at the business unit level or the product family level, not the individual product level.

Traditionally, S&OP is simply an extension of the consensus forecast, and because of that it suffers from similar limitations: It doesn't start with a unified view of demand, doesn't create a plan at the SKU level, doesn't distinguish between supply chain segments, and is driven mostly by common sense, experience, and intuition, not data and analytics. Because it's a manual process, it generally takes a month.



Companies need key performance predictors: metrics that indicate what the state of the supply chain will be in the next three to six weeks. These are central to smart execution.

A better approach to S&OP replaces the manual process with an automated one that can be performed weekly, and ensures that the engineering, finance, sales, supply chain, manufacturing, sourcing, and trade functions are all working to achieve the same business goals. The new process begins when an analytics-driven optimization system generates the SKU-by-SKU supply plan we described earlier. This plan will inform everything from master production schedules to materials planning to logistics, including inventory and transportation decisions.

While not every company or business unit needs to produce a plan weekly, such frequency is critical for products whose demand is highly volatile and whose marketing and promotion strategies often change.

The new S&OP process also calls for monitoring activities. Firms should collect information throughout the supply chain about key performance indicators (KPIs) such as supply lead times, raw-material and finished-goods inventories, and service levels, looking for any problem or deviation that could undermine the sales and operations plan. Firms can then work to address those issues and, if they turn out to be significant, adjust the plan itself.

Companies also need to keep an eye on data and events that portend what may happen in the near future. For example, while inventory and service levels may suggest that everything is going smoothly, shipment-tracking data may indicate that lead times are likely to increase and that as a result service levels could go down in the next few weeks, signaling a need to build inventories or expedite shipments. Similarly, if a disaster causes the shutdown of a supplier's manufacturing facility in Asia, it could affect available supply down the road—perhaps forcing a firm's manufacturing and assembly plants on the U.S. West Coast to lower or stop operations in five weeks. But traditional KPIs alone might not provide any warning.

For this reason, companies need key performance predictors (KPPs): metrics that indicate what the state of the supply chain will be in the next three to six weeks. KPPs are central to what we call *smart execution*, a new business process that complements smart S&OP. While S&OP focuses on the next 50 to 80 weeks, smart execution homes in on the short term (no more than six weeks) and tries to identify and quickly respond to disruptions and deviations from the plan.

Smart execution involves three automated capabilities: (1) the real-time capture of internal and external data that reveals potential deviations from the plan, supply disruptions, or changes in demand; (2) artificial intelligence that identifies the potential impact of those developments on supply chain performance; and (3) analytics-driven optimization that determines the best response, considering various trade-offs and objectives.

Here's an illustration. By gathering financial information on suppliers that are public companies and internal data on supplier performance (for instance, on lead times, service levels, or product quality), firms may be able to identify distressed suppliers. An AI system can then project the likelihood and impact of a supplier default on future commitments to on-time delivery and product quality. Finally, the automated optimization system can identify an alternative supplier for sourcing the material.

FOR MOST OF its history, the CPG manufacturing company had used a one-size-fits-all strategy. Its forecasts were achieved by consensus, S&OP was a monthlong process, the supply chain strategy didn't distinguish between different products, and deviations from the plan and supply disruptions were managed ad hoc. The company had excelled at operational efficiency by embracing continuous improvement in its production, packaging, distribution, and order fulfillment processes, but it hadn't fundamentally changed any of them. Our approach to supply chain digitization allowed the firm to transform the organization in less than half the time and at less than a quarter of the expense that such efforts take most corporations.

Other firms can do the same. A comprehensive, automated approach can allow them to redefine their supply chain strategies and respond quickly to deviations from the plan. And because it's driven by AI, it will free up executives to devote more time to value-added activities, such as identifying the best opportunities for growing the business. ©

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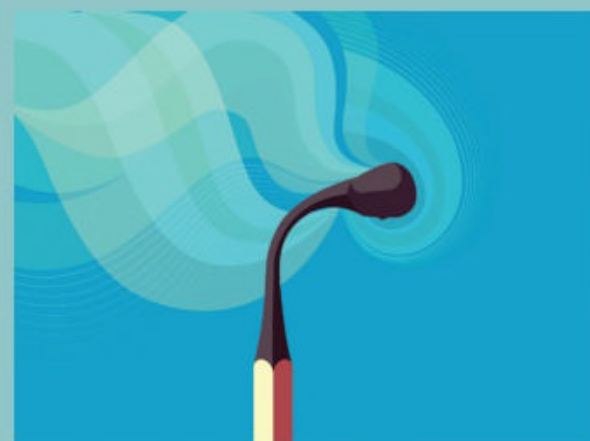
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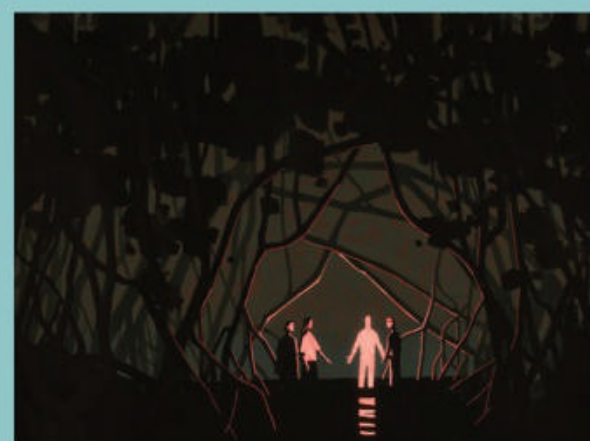
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MANAGING YOURSELF

Feeling Stuck or Stymied?

Now's the time to build your career with strategic patience.

by Dorie Clark



Experience

Advice and
Inspiration

T

IME AND AGAIN,

we're reminded that there's no such thing as overnight success. But how long *should* it take us to achieve our career goals? When progress is slower than we'd like, many of us are left wondering: *Is my plan not working—or just not working yet?*

Over the past several years—including during the pandemic's cycles of work frenzy and stagnation—I've researched the question of how we can bring more long-term strategic thinking to our professional lives, despite living in societies that so often glorify high-speed achievement and force us into personal comparisons.

The early 20th century satirist H.L. Mencken once quipped that success is making at least \$100 more a year than



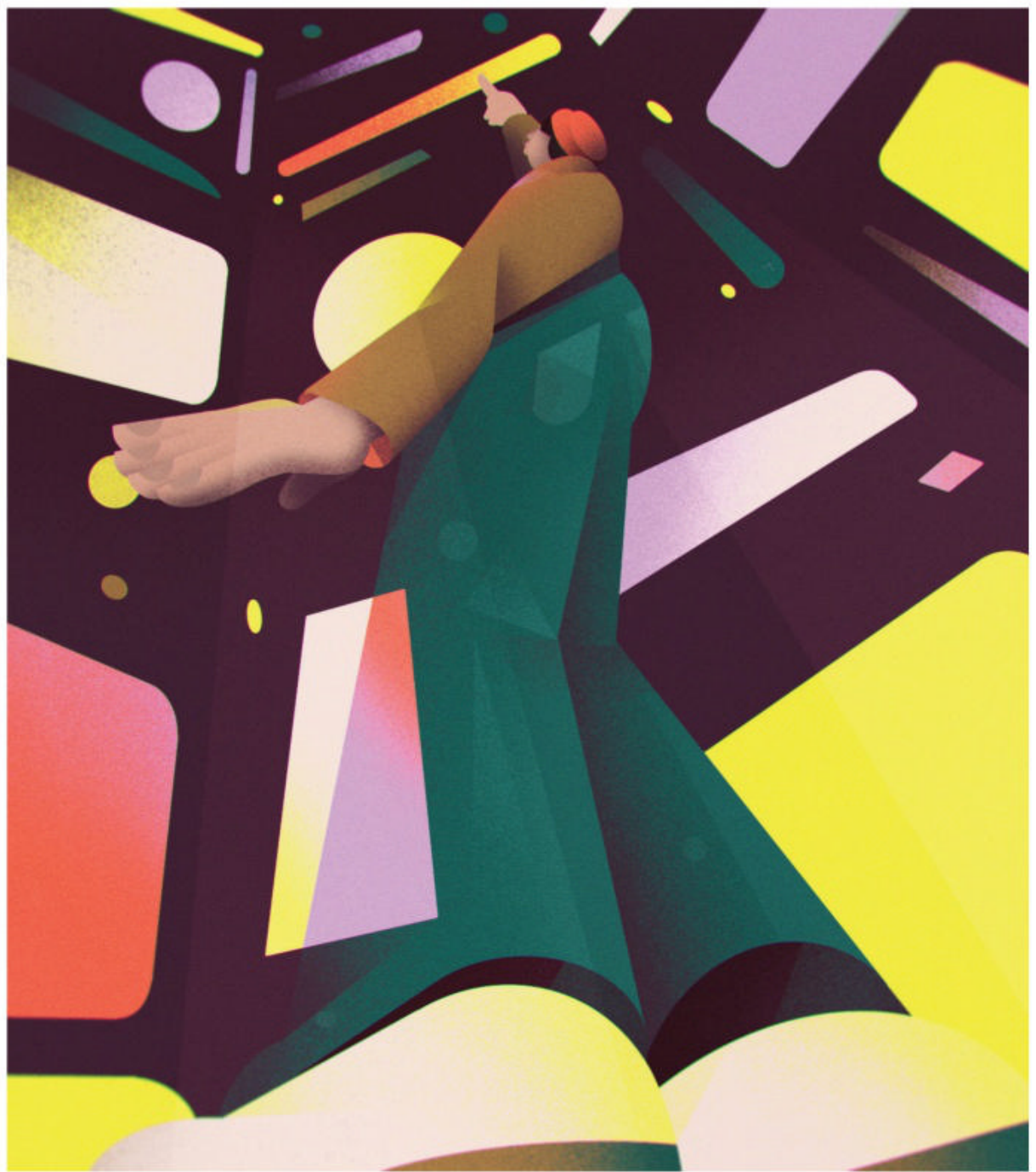
Experience

your brother-in-law does. But these days, thanks to social media, we're benchmarking ourselves not only against relatives but also against college pals, coworkers, and even celebrity influencers. When we see some of those people gain recognition early on—by launching unicorn start-ups, winning coveted prizes and promotions, or making “30 under 30” lists—we forget that they're the exceptions, not the norm.

For many professionals, progress can be frustratingly slow or sputter out unexpectedly. That's common. And yet in these moments a lot of us become dangerously demoralized. Consider Paul Cézanne, whose talents were initially ignored and underappreciated. According to David Galenson, a University of Chicago professor who studies the economics of creativity, Cézanne had “a deep, dark insecurity” as a result. At age 45, a man who would later become an inspiration to young artists—dubbed “the father of us all” by Pablo Picasso—doubted he'd accomplished anything at all.

Businesspeople who hope to build careers in competitive industries, scale up their ventures, or gain recognition in their fields can fall into the same downward spiral. Without a clear understanding of what constitutes a reasonable pace for progress or a way to explain why peers are outachieving them, they may write off promising paths, downsize their plans, or quit altogether. And unlike Cézanne, who slogged on and eventually became a legend, they give up way too soon.

Of course, we shouldn't blindly follow a failing strategy into the grave.



But I've found that a lot of professionals make the opposite mistake. They don't allow themselves enough time to succeed. Instead, they need to cultivate “strategic patience.” Just as long-term stock investors learn to stand firm on sound ideas during market downturns, people can learn to calmly evaluate the evidence and persevere even when the result isn't guaranteed.

But doing so requires more than following the standard—and passive—advice to just be patient. You need to be both thoughtful and proactive. A good way to do that is with a five-step approach involving periodic reassessments and realistic timelines, which helps you lay the groundwork for eventual success.

RESEARCH THE TARGET AND TERRAIN

In his 2018 letter to Amazon shareholders, Jeff Bezos told a story about a friend of his who had hired—wait for it—a handstand coach. The coach informed her that most people think they should be able to do a handstand with two weeks' consistent practice. But it actually takes more like *six months'* effort—a stunning 12-fold difference in perception versus reality. If you're under the impression that a target is 12 times easier to achieve than it actually is, it's perfectly rational to give up after a month of trying, thinking you just don't have what it takes. Of course, the problem isn't you or your skills. It's expecting the impossible.



The goal isn't to charge forward with all ambitions. Instead, it's to nurture the right ones, jettison the wrong ones, and avoid giving up too soon on viable initiatives.

Just like aspiring handstanders, most of us are fairly clueless about what the path to success in our careers actually looks like. Should it take a year? Five years? Fifteen? If you want to become known in your field, do you have to present at 10 conferences, a hundred, or a thousand? If you want to be promoted to team leader, how many stellar performance reviews and project management roles do you need under your belt? If you want the head sales job, which types of clients should you focus on? We often don't know such crucial information and don't realize we're lacking it. So we fixate on unrealistic timelines that can sometimes lead us to despair.

That's why it's important, as you develop and refine your professional objectives, to do research on what has worked for others in the past and make an educated estimate about how long it will reasonably take you to attain your goals. Conditions may vary, but having a rough baseline is helpful.

Reach out to colleagues who have accomplished what you'd like to and push them to identify the markers along their paths. ("How long did it take you to make your first six-figure sale?" you might ask. "How many prospect meetings had you held? How many phone calls did you have to make to land those meetings?") In most cases, unless these people view you as a direct competitor, they won't object to sharing that information. They may be surprised by the level of detail in your questions and have to refresh their memories, but that's typical because no one else asks about these things—which can give you a competitive advantage.

Mapping the terrain enables you to create checkpoints at which you can reflect on your progress or lack thereof. Say you're a start-up founder and you know from your research that successful companies in your industry typically hit \$2 million in revenue by the end of year two, but you're 18 months in and your projections are barely half that. That's a sign that you need to shift your approach quickly or perhaps get out of the business.

After all, the goal isn't to charge forward with all ambitions. Instead, it's to nurture the right ones, jettison the wrong ones, and avoid giving up too soon on viable initiatives that are simply taking a while to gain traction.

RECOGNIZE THAT PROGRESS CAN BE BARELY PERCEPTIBLE

There's a long phase in the development of technologies that improve at an exponential rate (like artificial intelligence, 3D printing, and self-driving cars) in which advances are so minimal that even though they're regularly doubling, it seems as if nothing is happening. Authors Peter Diamandis and Steven Kotler call this period the "deception phase," because it prompts many to prematurely dismiss the technology. But once the advances hit a certain threshold, the improvement curve turns sharply up, and success is stunning and swift. (Think of the transition to digital cameras.) The same principle is true in our careers.

As Derek Sivers, the founder of the music distribution company CD Baby, recounted in one interview, his company didn't take off for four years. "Very

often I meet people who start their dream idea, and they're a few months into it and they say, 'It's just not going well!' I'm like, 'It's been a few months! Come on!' When I was three years into CD Baby, it was just me and a guy in my house." By year 10 he had sold the company for \$22 million.

I've seen something similar happen with the more than 600 participants who have gone through my online Recognized Expert course, which teaches professionals how to build their reputations and brands. On average it takes them about two to three years of effort to show almost any progress in expanding their platforms, and about five years to show meaningful growth.

That said, in the absence of clear movement toward your goal or even the milestones you've set out, you should be able to find small, motivating wins. I call these "raindrops" of progress. They start out intermittent and barely perceptible—praise from a boss or a client, LinkedIn requests from strangers who have started to hear about your work, an invitation to lead a committee, and the like—and on their own, they're not worth popping open the champagne.

But in the aggregate, they're leading indicators of forward momentum, and they can keep you motivated when progress is slow. For example, one talented executive at a consumer packaged goods company I know was overdue for a promotion, but the pipeline was clogged, and she had to wait for a position to open up. It could have been a frustrating interregnum, but she instead focused on noticing raindrops like being asked to present her innovation plans to top customers—a very high visibility



It's human to mark our progress by comparing ourselves with others. But that's often a recipe for feeling terrible. We need to clamp down on that pernicious habit.

opportunity—and receiving unsolicited praise from the group president. It took longer than she wanted, but thanks to her perseverance, she eventually moved up the ladder.

LEVERAGE YOUR RELATIONSHIPS IN THE RIGHT WAY

It's human to mark our progress by comparing ourselves with others. But that's often a recipe for feeling terrible. We need to clamp down on that pernicious habit and gain strength from our interpersonal relationships instead.

Rather than looking enviously at more-advanced peers and lamenting your own stagnation, remember to contextualize everyone's success. A good example is the golf handicap, which enables an amateur golfer to enjoy a game against a much better player by using a standardized measure that accounts for that player's advantage. Instead of saying, "Tiger Woods beat me by 45 strokes," which is demoralizing, you could focus on the fact that, taking your handicap into account, you played a better game by your standards than he did by his.

For instance, one friend I know used to measure himself against a particular colleague—until he realized that person had a 17-year head start on him. Now he reminds himself that while he's not as successful as his peer today, he's close to the point where the other man was 17 years ago. Taking age, experience, and other relevant data points into consideration is a far saner and gentler way to approach competition.

Another way you can gain from relationships is to surround yourself with

trusted advisers and have them help you evaluate your progress and determine if it's time to pivot. When you're wrapped up in pursuing a certain goal, it's not uncommon to lose perspective and either cling to a failing approach or despair too quickly about a viable one that's percolating slowly. That's why a reality check from a trusted colleague is so necessary.

Elena Akhmetova discovered that several years ago, when she took on a new role within a global tech company. Her mandate was to build an organizational structure from scratch for a critical 250-person department. Three months into the project, after she'd hit repeated roadblocks, her motivation waned: *Was she on the right track? Was she even doing something useful?* She turned to her senior vice president, with whom she had a long-standing relationship. He gave her practical guidance about how to adjust her approach. But even more important, she says, "He told me that this role was so critical now, and there was no other leader who could take it." It was "recognition, respect, and support, all together, and of course, I was able to finish the project."

STOP MOVING YOUR GOALPOSTS

There's a term in environmental science—*shifting baseline syndrome*—which refers to the tendency to change the reference point or norms we measure something against. A scientist, for example, might look at the decline of a species over the length of her career, rather than over the past several hundred years, which would create a distorted perspective.

A similar kind of phenomenon affects the way many professionals evaluate their career trajectories. Over time they get used to their success and begin to take it for granted. One colleague, for instance, says that when she began a collaboration with a major figure in her industry, "the first time I was in the room with him, it felt massive." Nowadays, she says, "it's not exactly humdrum, but it feels normal. I'm a little bit onto the next thing."

She's far from alone. Because we're often so fixated on large-scale goals (the promotion, the invitation to be a keynote speaker, the industry award), we write off some achievements as no big deal, forgetting that five years—maybe even a year—before they would have felt like huge accomplishments. When we keep moving the goalposts, we distort and erase the progress we've already made, which obviously feels discouraging and makes us far more susceptible to quitting. But if we can instead notice and honor where we started and how far we've come, it inspires us to keep moving forward.

AIM FOR "DIRECTIONALLY CORRECT"

It's rare that any of us will attain everything in the exact form we predicted. Circumstances change over time (your spouse receives a compelling overseas job offer), and some possibilities are blocked to you through no fault of your own (your company was acquired and your role got eliminated). Instead of dogmatically pursuing one goal, consider striving to make directional progress.

When I was in my early twenties, my goal was to become a university



professor. So I dutifully took my GREs and applied to multiple doctoral programs. I was rejected by every single one. It was a devastating setback at the time, but within two years I managed to find a side door. As a fallback I had become a journalist, and with some casual networking through my new job, I managed to land a gig teaching a mass media course at a local university—without the years of study or the expense of a PhD. Nearly 20 years later I still teach, now at several top business schools.

Similarly, Dayna Del Val knew her calling: to become a successful film actress. But faced with an unexpected pregnancy after college, she instead decided to stay near family and raise her son. Her home—near the border of North Dakota and Minnesota—wasn't

exactly Hollywood North. But she didn't give up on her ambitions. She tried out for regional acting gigs, eventually landing a signature role as the face of North Dakota in the state's tourism campaign. Del Val's visibility as an actress led to something else unexpected: a position at a local arts nonprofit. For a decade she has served as its CEO, quadrupling its budget and its ability to support the regional arts community.

Del Val didn't become the next Meryl Streep, but she nonetheless carved a meaningful path for herself. "I had a way bigger career than many of my friends who moved to New York or Los Angeles," she says. They often spent years getting rejected at casting calls and never found work they loved, while she thrived in her local creative ecosystem.



Experience

None of us can predict every turn our careers or lives will take. We also probably won't land every job we apply for or win every laurel we seek. But that doesn't mean we can't craft a uniquely satisfying, directionally correct form of professional success.

LET'S FACE IT: Patience is annoying. It would be far better if we didn't need it at all and could achieve everything we wanted quickly. But the truth is, in almost all cases, our most meaningful goals require effort and perseverance—and time.

You might need to write a blog few people read as a way to test your ideas and slowly build an audience; take a Toastmasters class when it seems as if no one cares what you have to say, to become a more effective presenter; or spend your lunch hour taking an online course on new developments in your field. You might have to keep making the effort, even when it seems pointless, boring, or hard. There will be dark moments when it's unclear whether you're making any progress at all.

But to achieve the outcomes—and build the career—you want, you have to be willing to work the process. With strategic patience and small, methodical steps—taken today, tomorrow, and the day after—almost any goal is attainable. ☺ **HBR Reprint R2105L**



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Case Study Is This the Right C-Suite Role?

by Anne Donnellon, Joshua D. Margolis, and Amy Gallo

HBR's fictionalized case studies present problems faced by leaders in real companies and offer solutions from experts. This one is based on the Harvard Business School Case Study "Sonia Millar: Negotiating for the C-Suite" (case no. 920555-PDF-ENG), by Joshua D. Margolis and Anne Donnellon, which is available at [HBR.org](https://hbr.org).

"ARE YOU READY?" the waiter asked Marta Seles. She'd known what she wanted since she'd sat down—no one had ever accused her of being indecisive—but she was waiting for her lunch partner to make up his mind. Zach Lockhart was the CEO of Top Street Wealth Management, a Silicon Valley-based financial services firm where Marta was managing director. He'd been mentoring her for the past few years, and they often met for lunch. But this time Zach had mentioned that he wanted to "run something by" her, so she was eager to get past the ordering and the small talk.

"I'm sure you're curious about what I wanted to discuss," he said, handing his menu to the waiter.

"Anything to do with your succession plan?" Marta ventured.

She was the head of private clients, family offices, and foundations, the largest and most important unit at Top Street, and had her sights set on Zach's role when he moved on. He was nearing 60 and already served on several boards and nonprofits. Most people expected him to depart within the next three to five years. Zach and Marta had talked openly about what it would take for her to secure the top job.



“Yes, sort of,” Zach started slowly. “I was hoping to persuade you to take the new CTO role.”

Marta could feel herself flinch. She was genuinely taken aback. *The CTO role?* she thought. *That came out of left field.*

Before she could respond, Zach continued. “As you know, the role now includes responsibility for our fintech strategy, especially AI, and we need someone with strategic vision who can push the group to execute. We both know that meeting our 2025 targets is dependent on that strategy. Heck, Top Street’s entire future hinges on the CTO role.”

Zach wasn’t exaggerating the importance of technology to the firm’s future. Despite being in Silicon Valley, Top Street had been lagging the competition, and its tech group was notoriously slow and unresponsive. Marta had been vocal about these risks, and with urging from her and two other managing directors, Zach and the board had finally agreed to invest heavily in tech to better serve clients and, they hoped, to leapfrog rival firms.¹ A key part of this investment was elevating the former IT director position to chief technology officer, responsible for developing a fintech strategy and building a tech function capable of rapid execution. Marta had assumed that they’d look outside for someone with deep technological know-how, not turn to a producing manager like her. After undergrad studies at MIT and the University of Chicago’s MBA program, she had started her career covering the tech sector as an analyst, but she’d pivoted to wealth management years ago.

“Why me?” she asked.

“We have a ton of technical experts already,” he explained. “They need a leader. I know that moving from a P&L role to a staff role may seem like you’re being sidelined, but you’re not. The board and I want a CTO with substantial management and client experience who also understands that fintech is central to our strategy. An outsider will take too long to get up to speed.”²

Marta knew there could be only one other internal candidate: Nelson Millon, managing director of endowments and pension funds and one of Top Street’s most successful business



heads. He was also the only other executive vying to succeed Zach as CEO. Nelson had a reputation as a superstar and was unafraid to ruffle feathers to get what he or his unit needed.

Marta couldn’t help wondering what Nelson would think about being offered the CTO role. Zach was right that she was probably better suited for it. As a talented manager with an impeccable track record of strong business results—and as a woman operating at the top echelons—she was something of a rarity in the financial services world.

“You’ve got the influence skills that this role requires,” Zach said. “You’ll be pushing the group—and the firm—to change fast, which is never easy. But I know you can do it.” He paused for a moment and put his fork down. “I need you in this role, Marta.”

She smiled. It felt good to be trusted. Still, she needed to think long term. “I have to ask: Does this affect the succession plan?”

“It would help your case,” Zach said. “We’ve been behind on tech, and this is our chance to take the lead. You’re already a star, but if you succeed at this, the sky’s the limit.”

And if I don’t? Marta knew better than to voice her anxiety to Zach, who always encouraged his people to project confidence.

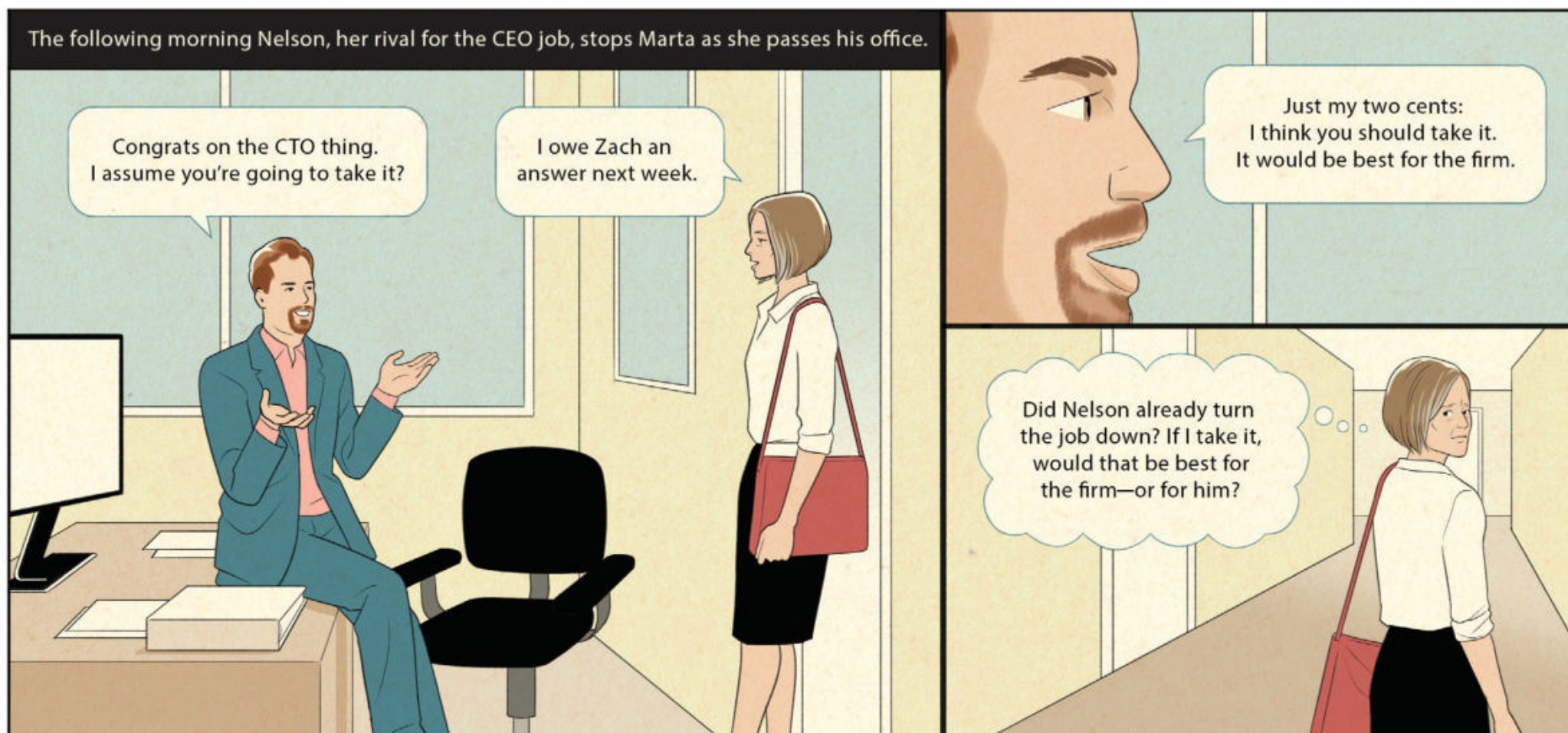
“I’m not leaving anytime soon,” Zach continued. “So you have time to crush this and then resume your P&L leadership role.



Case Study Classroom Notes

1. In a PwC survey, 60% of asset and wealth managers say they believe that part of their business is at risk to fintech, but only 45% said that they place it at the heart of their strategy.

2. A recent study shows that although CEOs promoted from within their companies often do the job more effectively than outsiders, external hires are often more capable of leading change initiatives and tend to make their organizations more productive in the long run.



3. Should Nelson's motivations affect Marta's interest in the role?

4. The number of female S&P 500 CEOs rose in 2020, but they still make up only 8% of the list. Meanwhile, studies show that companies with women in at least 50% of the senior operating roles generate a return on equity that is 19% higher on average than firms that are mostly male-led.

This would actually be a stepping-stone to the top job.”

Marta could tell he believed what he said, but she wasn't convinced. *A stepping-stone?* she thought. *Or a detour?*

OFFICE POLITICS

Walking into the office the next morning, she saw that Nelson was the only other person there. As she passed his door, he motioned for her to come in.

“What's up?” she asked.

“Just wanted to say hi.” Nelson didn't usually have time for pleasantries, so she waited to see what his real motive was.

“Congrats, by the way, on the CTO thing. I assume you're going to take it?” She made an effort to keep her face neutral. How did he know about it already?

“I owe Zach an answer next week,” she said, trying to interpret Nelson's body language.

“Of course,” he said, nodding. “Listen, just my two cents, but I think you should take it. Everyone knows you're perfect for it. And it would be best for the firm.”

As she headed to her office, Marta tried to decipher what had just happened. Did he know about the role because Zach had offered it to him first? Had he already turned the job down? Would anyone even suggest that he, their golden boy, move into a staff role? If the role truly was a next step to the CEO seat, why would Nelson want her to have it?³ Did he really think it was best for the firm? Or best for him?

THEY MEAN WELL

“He wants you out of the way,” said Olivia Escobar. Olivia was Marta's closest confidante at work and one of the few other female managing directors at Top Street.

“Yep. Nelson's always looking out for himself,” said Marta.

The two women were sitting in the small conference room at the back of the office where they met when they had something sensitive to discuss.

“This is one of those times when you say, ‘No, thank you,’ and ‘I so appreciate the opportunity,’ blah blah blah,” said Olivia. “And then you go back to becoming the next CEO.”⁴

“Zach was clear that it would still happen, Liv,” Marta said.

“He probably thinks it will, but once you're in a staff position, it's hard to move back, especially in this industry. CEOs are producers, not support staff. Look at what happened to Paige and Tania.” Olivia and Marta had started out as analysts in the same cohort at a top-tier investment bank. It was a tight-knit group, and they'd all stayed in touch. Their former colleague Paige was now

Marta and her closest work confidante, Olivia, meet to talk about the job offer.

This is one of those times when you say, 'No, thank you.' And then you go back to becoming the next CEO.

But I trust Zach. He's never steered me wrong before.

You're being asked to take this probably thankless role while Nelson gets to keep raking in clients and contending for the CEO seat. Once you're in a staff position, it's hard to make the move back, especially in this industry.

the CHRO of that firm, while Tania was the chief risk officer at a midsize tech company. Neither seemed unhappy with her job, but Marta understood Olivia's point: They weren't ever going to get the top job where they were.

"I'm sure they both had well-meaning mentors like Zach who encouraged them to take those jobs," Olivia continued. "But I just worry that you're being shoved aside. You're one of the highest-performing managing directors in this whole industry. You're constantly fending off recruiters. It's ludicrous to think that you should give up your P&L responsibility and your autonomy.⁵ Any progress you'd make with the technology group would be hard-won. If you were a man, I don't think this would even be a consideration."

"Is that true, though," Marta countered. "If Nelson had the same skills and background I do,

wouldn't Zach be tapping him for the role?"

"But he doesn't have your skills!" said Olivia. "As a woman, you've always had to be competent and likable to get ahead. And now, because of that, you're being asked to take this challenging—probably thankless—role, while Nelson gets to keep raking in clients and cash. You know that when the board is considering a successor, they'll be asking who can really bring in the revenue and run a tight ship."

"I know it would be hard for me to sit back and watch Nelson do his golden-boy thing," Marta replied, "but I trust Zach. He has never steered me wrong before."

"I'm sure Zach has your best interests at heart," Olivia said. "But it's often our friends and mentors who unwittingly hold us back. He means well, but he might be as biased as the rest of them."⁶

SPACE TO THINK

The following Saturday morning, Marta went for a hike in Foothills Park. She needed some peace and quiet to sort through this decision. As she started up Coyote Trail, she replayed the conversations she'd had that week.

Olivia's voice was the loudest in her head. She'd been adamant that Marta turn down the offer. Marta reminded herself to take that advice with a grain of salt. Olivia was the head of the firm's DEI committee and the executive sponsor of its women's employee resource group. She saw gender bias everywhere, and while she was rarely wrong when she called it out, Marta didn't want her friend's perspective to dominate.

She could still feel Zach's intensity when he'd said, "I need you in this role." How could she say no to her longtime mentor? She didn't want to jeopardize



5. Research shows that in jobs historically held by males, men are assumed to be competent whereas women must earn others' esteem, putting male candidates like Nelson at a distinct advantage in leadership contests.

6. Could Zach be steering Marta toward the CTO role because subconsciously he can't see her in the top job?



Experience

her reputation with him and the board—and her chances of eventually becoming CEO. Was this a “damned if you do, damned if you don’t” situation?

She ran through the upsides of becoming CTO. It would be a challenge, for sure, with an extremely steep technological learning curve, but it was a seat at the C-suite table. Running the firm’s most important function, setting its strategy, and transforming the department would give her a chance to distinguish herself and win over directors who might favor Nelson or an outside successor.

She knew it could go the other way, too. Zach and the board’s vision of Top Street as a technology-powered firm might not be realistic. She could put her all into it and still fail to meet their expectations. That would surely knock her out of the running for a CEO seat at her own firm or any other.

She stopped to take a sip of water and looked out over the view of the Bay Area. It was a clear day, and she could see for miles. She thought, *If only I could see into my future with this kind of clarity.* ☺

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Should Marta take the CTO job?

The experts respond.



RAKEFET RUSSAK AMINOACH is a managing partner at the venture capital firm Team8.

This is the perfect opportunity for Marta to show Zach, the board, and everyone else at Top Street that she’s ready to be the CEO.

By accepting this offer, which comes at the personal request of her mentor, she shows herself to be someone who

is willing to bravely step up and put the company first.

The timing is ideal for her. Zach isn’t leaving for a while, and Marta has already been a successful managing director. Is she better off sitting around in the same chair waiting for him to leave or taking on a new challenge and making her mark in the CTO role? Gaining further credibility and skills will surely stand her in good stead.

I understand why some people would think that moving into a staff role takes you out of the running for CEO: Instead of bringing in revenue and interacting with the firm’s key customers, you become a cost center. Indeed, if this

were any other C-suite staff role, that might be the case. However, the CTO role isn't just any functional position. It's transformational—especially given the current state of the IT department. If Marta can fix it, that will be a game changer. In 2021 technology is king; it's a key enabler for any organizational turnaround.

In June 2019, I faced a similar decision about my future. I had been CEO at Bank Leumi for seven and a half years, a period during which we'd become Israel's largest bank in terms of market cap. I could've stayed on in the role, but I'd achieved much of what I wanted, and I realized that I was ready to move on. So I stepped down to pursue a third career, this time in high tech, and founded Team8 Fintech.

I'd advise Marta to go into "noise canceling" mode in making her decision. Most certainly, she should dismiss anything Nelson says. Whether he thinks the position will be a good fit for her or wants to see her fail is irrelevant. Olivia's and Zach's counsel is a bit harder to disregard, but Marta must remember that friends and mentors are often biased by their own beliefs, fears, and life experiences. Even if they want what's best for us, they're not impartial. My decision to step down was based mainly on my own instincts.

Marta has to think about what *she* wants. It's not an easy call. Instinctively she flinched when offered the job. I understand why: Her tech background is a bit outdated, and she's extremely successful in her current role, positioning her nicely to take over from Zach. Then, out of the blue, Zach jolts her out of her comfort zone!

But if I were asked to choose the one characteristic that propelled me to become KPMG Israel's CEO at age 34 and Leumi's CEO at 46, I would say that it was my inability to remain in my comfort zone. If Marta's aspirations are as big as she says they are, she shouldn't stay in hers either.



NADIA RAWLINSON is the chief people officer at Slack and a board director at Vail Resorts and J. Crew Group.

Accepting this role is not a smart move for Marta.

It won't be easy to say no, but if her aim is to be CEO of Top Street or any other firm, that's what she should do.

Before she declines, though, she should get more clarity on the succession plan. Zach says she's in the running, but CEO appointments aren't solely up to the outgoing leader. The board members will make the final call, and there are several ways they may be conceiving of this move for Marta. They may see the CTO role as a way station on Marta's route to chief executive, or they may view it as a development opportunity meant to determine her fitness. It's also possible that in the event that she's not chosen to be Zach's successor, they will use the CTO opportunity as a way to retain a strong female leader with an impeccable track record.

Given that Marta doesn't know what the board is thinking, her next step should be to reach out to her connections and find out more about the previous succession process, when Zach was chosen to lead the company. Knowledge of how that transition was handled will give her insight into the coming one. Ideally, she'd learn more from Zach and speak with an independent board member as well. She should have developed relationships with a few directors in her current role, and if she hasn't, that's telling. Although she might not get straight answers, she may be able to piece together details from the conversations to help her better understand the situation.

I, for one, have two major hesitations about the CTO job. First, it's clear that

technology is key to the company's go-forward strategy, and I'm not sure Marta is set up to succeed in the role. IT hasn't historically been seen as a critical function, and as a general manager with outdated tech skills, Marta lacks the deep expertise necessary to lead the transformation. She may also struggle to earn the respect of her peers and team members, making her challenge more difficult.

Second, it's rare to see a woman with P&L responsibility for a critical part of a financial services firm's business, and I'd advise Marta not to give up that leverage easily. We know from research on the "punishment gap" that women and people of color are treated differently when they stumble and are given fewer opportunities to get back on track. If she doesn't succeed as CTO, it will be harder for her to return to the same or another P&L role. The stakes are high for Marta.

My recommendation is that she stay in her current job and advise on the technology transformation from a position of strength. Working with Nelson and a new CTO would be an opportunity to exercise her diplomacy and collaboration skills and show the board that she's capable of managing both of them in the future.

Saying no to one's sponsor isn't a decision that should be taken lightly. Zach has most likely invested political capital in advocating for her appointment to CTO, but that is a risk that can be managed, not a reason to accept the offer. She should make a case for how she can contribute to the firm's transformation in her current role.

For many people, taking a circuitous route to the top is fine. They can be patient and play the long game. But as a highly successful woman in finance, Marta is more likely to become CEO by staying on the direct path. ☺

HBR Reprint R2105M

Reprint Case only R2105X

Reprint Commentary only R2105Z



Experience



SYNTHESIS

Getting Back to Business

The future of shopping in the post-Covid world

by Juan Martinez

ANY NEW YORKER will tell you: Times Square is a nightmare. I'd rather walk three blocks out of my way than face the panhandling Spider-Men and a nearly naked cowboy. No, I don't want a Swatch or a five-pound, \$60 candy bar from the Hershey's store. Stand in freezing temps for hours to see a ball drop? I'd rather *be* dropped.

But my relationship with Times Square changed in April 2020 when I stood on 42nd and Broadway under a drizzle-induced fog, alone, every storefront shuttered,

every theater closed, not a pedestrian in sight.

My city, with its more than 32,000 stores and 214,000 retail workers, was on the verge of ruin. Across the U.S., retail sales had plummeted, with huge declines for clothing stores (down 89% from February to April 2020) and department stores (down 45%), Deloitte reported. Brick-and-mortar stalwarts Brooks Brothers, J.Crew, Neiman Marcus, and Pier 1 all filed for bankruptcy in 2020.

Despite a 3.2% drop in physical store sales last year, however, the National Retail Federation (NRF) reports that overall retail sales actually grew 6.7%, fueled largely by e-commerce. And the forecast for 2021 is even better. The NRF expects growth of up to 8.2% as the economy reopens.

Such forecasts anticipate a return to pre-Covid shopping patterns, but five new books take a hard look at the retail landscape. Did Covid-19 destroy in-store shopping? Can retailers revitalize the brick-and-mortar experience to lure customers back to physical locations? The books explore lessons learned during the pandemic to demonstrate how successful stores and brands are tackling these challenges.

No one writes more optimistically about the future of retail than Mark Pilkington, the former CEO of British lingerie brand Gossard and author of ***Retail Recovery: How Creative Retailers Are Winning in Their***

Post-Apocalyptic World. Pilkington expects the next several years to produce the greatest industry shift since the Industrial Revolution and contends that creative retailers will have the advantage over complacent incumbents. He emphasizes the relative strengths of multiple channels, noting that e-commerce is superior for transactions because it is lower-cost and more efficient, accessible, and convenient, whereas physical stores offer the potential for more-experiential, value-added “theaters” that educate, serve, and please customers. Regardless of the channel, he advises improving technology for personalization and two-way communication.

Retail’s missing element of theater is also examined in **Resurrecting Retail: The Future of Business in a Post-Pandemic World**, by Doug Stephens, a columnist for CBC Radio and the founder of the consultancy Retail Prophet. Stephens derives his message from H. Gordon Selfridge’s seminal 1918 *The Romance of Commerce*, in which Selfridge, the founder of the eponymous British department store, calls on retailers to be more imaginative. Stephens argues that the pandemic can launch a new era of brilliant retail, but only if stores and brands experiment with digital and physical experiences that entertain and inform customers.

“In pursuit of efficiency and ever-increasing profit, we’ve siphoned the artfulness and theater out of our industry. How disappointed would Selfridge be if he went shopping today, only to find the cold concrete cathedrals of consumption we call big box stores, hyper-markets, and malls, devoid of much of the energy, theatrics, and thrills retail can and should provide.”

The tension between creativity and productivity is also explored in **The Brains and Brawn Company: How Leading Organizations Blend the Best of Digital and Physical**, by Robert E. Siegel, a lecturer in management at Stanford’s Graduate School of Business. Rather than abandon traditional strategies in favor of innovative digital processes, Siegel recommends blending whatever a brand does well—regardless of channel—and ditching everything else.

Drawing on examples including Borders, Daimler, and Nike, Siegel investigates clashes between traditional retail and digital innovation. He points to the cautionary tale of the now-defunct Borders, which outsourced its e-commerce business to an up-and-coming online bookseller: “According to the deal announcement, Amazon would handle inventory, shipment, site content, and customer service, while Borders would ‘leverage its brand name to drive sales.’” Stephens acknowledges that at the time, Borders was facing challenges on other fronts as well but maintains that “the Amazon partnership played a major part in destroying the company’s ability to compete.”

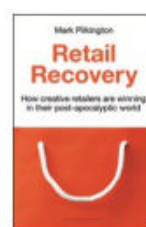
Steve Dennis, the former chief strategy officer and SVP of multi-channel marketing for the Neiman Marcus Group, aims to help retailers avoid a similar fate (as well as the bankruptcy that befell the company after his tenure) in **Remarkable Retail: How to Win and Keep Customers in the Age of Disruption**. Dennis argues that customer experiences should be digitally enabled, human-centered, harmonized, mobile, personal, connected, memorable,

and radical. He stresses the importance of new realities, such as the growing gap between U.S. upper and lower classes and the need to blend online and in-store experiences as brick-and-mortar traffic shrinks.

The ability to deliver goods with astounding speed and scale—in a direct-to-consumer model or through a platform like Amazon—is a significant reason many retailers withstood the pandemic. Those that, like Alton Lane and Sephora, previously relied on foot traffic but speedily adapted to the new reality of lockdowns and store closures were the ones to survive. *Wall Street Journal* columnist Christopher Mims investigates supply chain technology and strategy in **Arriving Today: From Factory to Front Door**. A logistics geek’s Xanadu, the book is packed with details about robotic warehousing, squeezing a 1,200-foot ship through the Panama Canal, and the largest fully automated port in the United States.

“By the time you finish this book, I hope that you will never again be able to take a package from your front step without feeling a tiny shiver at the gob-smacking effort and complexity behind its delivery to your home,” he writes, somehow making the ho-hum experience of receiving a box read like a sci-fi epic.

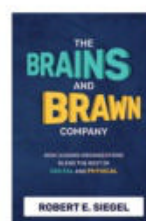
Many of the shops that helped attract more than 66 million visitors to Times Square in 2019 will never reopen, but the opportunity for reimagination is thrilling. The thriving stores of the future will be driven by data, technology, and even a little theater. I can’t wait to visit them.  **HBR Reprint R2105N**



Retail Recovery
Mark Pilkington
Bloomsbury
Business, 2021



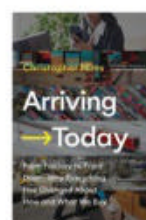
Resurrecting Retail
Doug Stephens
Figure 1
Publishing, 2021



The Brains and Brawn Company
Robert E. Siegel
McGraw-Hill
Education, 2021



Remarkable Retail
Steve Dennis
LifeTree, 2021



Arriving Today
Christopher Mims
Harper
Business, 2021



JUAN MARTINEZ is a senior editor at Harvard Business Review.

Executive Summaries

September–October 2021

SPOTLIGHT



Rebuilding Your Workforce

The nature of work in a variety of sectors shifted radically during the Covid-19 pandemic. Now companies must decide how to maximize their employees' skills and potential as they adapt to a new reality. | page 41

Each article in this Spotlight is available as a single reprint. The complete Spotlight is also available as a package.
HBR Reprint R2105B



Future-Proofing Your Organization

Michael Mankins, Eric Garton, and Dan Schwartz | page 42

Even before working from home became widespread, digital technology was transforming how and where work gets done and how many people are needed to do it.

In the aftermath of the pandemic, companies can rebuild a workforce that is better equipped for an economy in which routine and repeatable tasks are increasingly machine-enabled.

Drawing on research by Bain & Company involving more than 300 large firms worldwide in every facet of the global economy, the authors identify six practices for companies to follow as they regroup and reorganize for the inevitable recovery.

HBR Reprint S21051



Return-to-Work Programs Come of Age

Carol Fishman Cohen | page 49

Millions of American women left the workforce during the pandemic, mostly to provide care for families when schools and other support systems closed. As the economy rebounds, companies will need to lure this talent back—and return-to-work programs provide a vehicle for doing so. These programs—aimed at mid-career professionals who've taken time off from employment—have been around for 20 years, and the author has been writing about (and consulting with companies on) them for nearly that long. In this article she gives an overview of the evolution of these programs, describes the various types, and suggests best practices to make them most effective.

HBR Reprint S21052



Elevate Employees, Don't Eliminate Them

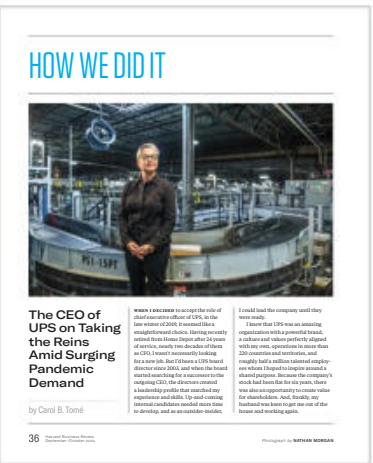
Ryan W. Buell | page 55

The last major global shock—the 2008 recession—led to what economists call a “jobless recovery” as companies found they could get by with fewer employees. But post-pandemic, the author writes, managers should focus on changing employees' roles instead. He has five key pieces of advice: Enable employees to meaningfully connect with customers in the moments that count; help them make more such connections by shifting the boundaries of their work; find ways to allow customers to lend a hand; ensure that employees can see the impact of their work on the lives of their customers; and invest some of the new value created in increased compensation and improved scheduling—which will in turn create more value.

HBR Reprint S21053

HOW WE DID IT

MANAGING YOURSELF



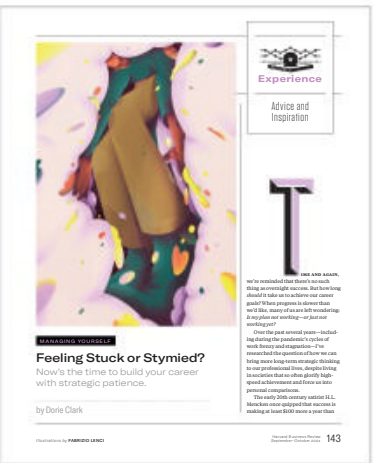
The CEO of UPS on Taking the Reins Amid Surging Pandemic Demand

Carol B. Tomé | page 36

When the author agreed to accept the top job at UPS, the global shipping service, in late winter of 2019, she expected to steer the company toward a brighter future. She had no idea that she would have to do it during a global pandemic that made her organization an essential service but kept most people at home and pushed demand for shipped goods to holiday levels year-round.

When she officially took over, in June 2020, she gathered her top team to decide on the principles to which they would hold fast during this crisis—including integrity, efficiency, constant learning and improvement, and a strong focus on both customers and employees. Among their top priorities were maintaining their brand relevance, keeping their balance sheet and credit rating solid, protecting their dual-class ownership structure, and continuing to pay a dividend. The organization divested from some businesses and invested in others, which has led over the past year to impressive growth, a happier customer base, and a more engaged workforce.

HBR Reprint R2105A



Feeling Stuck or Stymied?

Dorie Clark | page 143

When people feel that their career progress is frustratingly slow or has sputtered out, they can become dangerously demoralized. Without a clear understanding of what constitutes a reasonable pace for advancement or why peers are outachieving them, they write off promising paths, downscale their ambitions, or quit altogether. But often these people are simply not giving themselves enough time to succeed. They need to cultivate “strategic patience.” What does that entail? Five things: doing research on what it realistically takes to achieve their goals; recognizing “raindrops,” or small wins that are early indicators of success; abandoning harmful social comparisons and instead leveraging their relationships in a positive way; appreciating how far they’ve come rather than continually moving the goalposts; and understanding that it’s OK for their career goals to shift as long as they keep moving in the right direction.

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Features

INNOVATION



What Evolution Can Teach Us About Innovation

Noubar Afeyan and Gary P. Pisano | page 62

Many people believe that the process for achieving breakthrough innovations is chaotic, random, and unmanageable. But that view is flawed, the authors argue. Breakthroughs can be systematically generated using a process modeled on the principles that drive evolution in nature: *variance generation*, which creates a variety of life-forms; and *selection pressure* to select those that can best survive in a given environment.

Flagship Pioneering, the venture-creation firm behind Moderna Therapeutics and one of the most widely used Covid-19 vaccines in the United States, uses such an approach. It has successfully launched more than 100 life-sciences businesses. Its process, called *emergent discovery*, is a rigorous set of activities including prospecting for ideas in novel spaces; developing speculative conjectures; and relentlessly questioning hypotheses.

HBR Reprint R2105C

PRICING



The Pitfalls of Pricing Algorithms

Marco Bertini and Oded Koenigsberg | page 74

More and more companies are relying on pricing algorithms to maximize profits. The use of artificial intelligence and machine learning enables real-time price adjustments based on supply and demand, competitors' activities, delivery schedules, and so forth. But constant price shifts have a downside: They may trigger unfavorable perceptions of a firm's offerings and its brand.

It's vital, therefore, to understand and manage the signals being sent by the algorithms. The authors offer real-world examples of companies that have succeeded in this endeavor and others that have not. And they recommend four steps to avoid harm: Determine an appropriate use case for algorithmic pricing and explain its benefits to customers; designate an owner to supervise and be accountable for the system; set and monitor guardrails, both to protect against wild surges and to learn how price changes affect all aspects of the organization; and override the algorithms when necessary.

HBR Reprint R2105D

TECHNOLOGY



How Chinese Retailers Are Reinventing the Customer Journey

Mark J. Greeven, Katherine Xin, and George S. Yip | page 84

The *Economist* opened 2021 with a cover story headlined "Why Retailers Everywhere Should Look to China." It's not hard to see why. China is both a large and a fast-growing retail market—worth about \$5 trillion in 2020—and highly digitized. And the pandemic has made digital every retailer's strategic priority. The authors draw from their research on Chinese retailers to explain five lessons that Western companies can learn from China as they develop their own digital market offerings:

1. Create single entry points where customers can access all their potential purchases.
2. Embed digital evaluation in the customer journey.
3. Don't think of sales as isolated events.
4. Rethink the logistical fundamentals.
5. Always stay close to the customer.

HBR Reprint R2105E

LEADERSHIP



Don't Let Power Corrupt You

Julie Battilana and Tiziana Casciaro | page 94

Although power is essential to taking charge and driving change, it makes leaders vulnerable to two traps that can not only erode their own effectiveness but also undermine their team's. *Hubris*—the excessive pride and self-confidence that can come with power—causes people to greatly overestimate their own abilities, while *self-focus* makes them less attentive to subordinates, diminishing their ability to lead successfully. The authors offer strategies for recognizing and avoiding these pitfalls. They outline how to cultivate humility and empathy as antidotes to hubris and self-focus, through actions such as establishing channels for honest input, creating visible reminders that success is fleeting, immersing oneself in other people's jobs and experiences, and embedding interdependence in organizational systems. A balanced relationship with power can seldom be developed overnight, but in time, leaders who follow this advice will boost their own effectiveness and facilitate exceptional performance from their teams.

HBR Reprint R2105F



AI Regulation Is Coming

François Cadelon et al.
page 102

For years public concern about technological risk has focused on the misuse of personal data. But as firms embed more and more artificial intelligence in products and processes, attention is shifting to the potential for bad or biased decisions by algorithms—particularly the complex, evolving kind that diagnose cancers, drive cars, or approve loans. Inevitably, many governments will feel regulation is essential to protect consumers from that risk.

This article explains the moves regulators are most likely to make and the three main challenges businesses need to consider as they adopt and integrate AI. The first is ensuring fairness. That requires evaluating the impact of AI outcomes on people's lives, whether decisions are mechanical or subjective, and how equitably the AI operates across varying markets. The second is transparency. Regulators are very likely to require firms to explain how the software makes decisions, but that often isn't easy to unwind. The third is figuring out how to manage algorithms that learn and adapt; while they may be more accurate, they also can evolve in a dangerous or discriminatory way.

Though AI offers businesses great value, it also increases their strategic risk. Companies need to take an active role in writing the rulebook for algorithms.

HBR Reprint R2105G



Unconscious Bias Training That Works

Francesca Gino and Katherine Coffman | page 114

To become more diverse, equitable, and inclusive, many companies have turned to unconscious bias (UB) training. By raising awareness of the mental shortcuts that lead to snap judgments—often based on race and gender—about people's talents or character, it strives to make hiring and promotion fairer and improve interactions with customers and among colleagues. But most UB training is ineffective, research shows. The problem is, increasing awareness is not enough—and can even backfire—because sending the message that bias is involuntary and widespread may make it seem unavoidable.

UB training that gets results, in contrast, teaches attendees to manage their biases, practice new behaviors, and track their progress. It gives them information that contradicts stereotypes and allows them to connect with colleagues whose experiences are different from theirs. And it's not a onetime session; it entails a longer journey and structural organizational changes.

In this article the authors describe how rigorous UB programs at Microsoft, Starbucks, and other organizations help employees overcome denial and act on their awareness, develop the empathy that combats bias, diversify their networks, and commit to improvement.

HBR Reprint R2105H



The Net Positive Manifesto

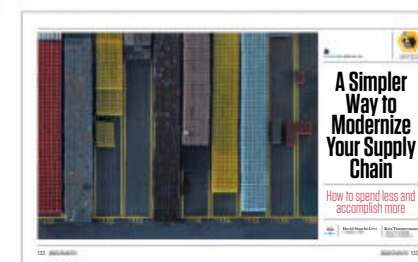
Paul Polman and Andrew Winston | page 124

Both practically and morally, corporate leaders can no longer sit on the sidelines of major societal shifts or treat human and planetary issues as “someone else's problem.” For their own good, they must play an active role in addressing our biggest shared challenges. The economy won't thrive unless people and the planet are thriving.

In this bold manifesto, consultant and author Andrew Winston and former Unilever CEO Paul Polman describe their vision of a “net positive” company—one that grows by helping the world flourish. Drawing on examples from Unilever and other leading companies, they outline four critical paths businesses can take to prosper today and win in the future. They can operate first in service of multiple stakeholders—which *then* benefits investors (as opposed to putting shareholders above all others); take full ownership of all company impacts; embrace deep partnerships, even with critics; and tackle systemic challenges by rethinking advocacy and the relationship with governments.

No company has yet reached the ambitious goal of becoming net positive. But a growing number have begun the journey—unlocking greater value for their businesses while helping solve larger problems for the benefit of all.

HBR Reprint R2105J



A Simpler Way to Modernize Your Supply Chain

David Simchi-Levi and Kris Timmermans | page 132

Conventional wisdom says it takes three to five years and tens of millions of dollars to digitize a corporation's supply chain. However, a few companies have reaped major benefits—including higher revenue and customer retention—with a faster, cheaper approach. It involves assembling available data; using analytics to understand and predict customers' and suppliers' behavior and optimize inventory, production, and procurement; and adding automation to revamp or introduce processes. The transformation requires three main initiatives: replacing consensus forecasts with one unified view of demand, changing one-size-fits-all supply strategies to segmented ones, and creating a plan to continually balance supply and demand and manage deviations or disruptions.

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“I like to say that pressure is a privilege. I enjoy big moments on the tennis stage.”



Billie Jean King

At age 11 King tried tennis for the first time and found her calling. She not only became the top female player in the world but also founded the Women's Tennis Association and WTA Tour and pushed for gender pay equity and more diversity in the sport. At the height of her career, after a triumph over Bobby Riggs in the Battle of the Sexes, she was publicly and painfully outed as gay, and she has since become an outspoken advocate for LGBTQ+ rights. Her new memoir is *All In*. **Interview by Alison Beard**

HBR: Tell me about the founding of the WTA Tour.

KING: When tennis became a pro sport, in 1968, the women wanted to have one association with the men, but they just rejected us. So in 1970 my then-husband, Larry King, suggested that Rosie Casals and I talk to Gladys Heldman, the publisher of *World Tennis Magazine*, about creating a tour. Gladys said she didn't have any money. So I told her, “Don't worry. You can sign us all up for a dollar.” Nine players joined. We had to get organized in three months and then, in 1971, with support from Philip Morris, we launched the Virginia Slims tour. We did it as a team and put our careers on the line: We knew we might get suspended from other tournaments. But we didn't care. We wanted any girl in the world, if she was good enough, to have a place to compete and be appreciated for her accomplishments, not her looks. Most important, because we came from the world of amateur tennis, making \$14 a day, we wanted to create a way to make a real living playing the sport we loved.

After being outed, how did you persevere?

Back in the 1970s and 1980s, as far as sexuality was concerned, it was a very difficult go. It was made very clear to me that I should not discuss anything in that area, or we would not have a tour. There was a real fear. Then I was outed, and it was excruciating. Still, I could play tennis. The court was where I had some sanctuary, where nobody but the umpire could ask me questions. I had support from other players,

friends, and Larry. What also helped was therapy.

How have you worked to make tennis more diverse?

From the start we thought about how to give girls of color a pathway. Althea Gibson was the first Black player of either gender to win a major. But we needed more players. “If you can see it, you can be it.” So Gladys went to the American Tennis Association, which was mostly Black, and got three of their players—Bonnie Logan, Sylvia Hooks, and Ann Koger—to join the circuit. Ever since, we've had many women of color. Most people know Serena and Venus Williams. I think that unless you're intentional, things usually don't change.

Was it the same with the push for gender pay equity?

Yes. In 1968, the first year players received money in the majors, I got £750 for winning Wimbledon, and Rod Laver got £2,000. I thought, *Oh no. This is another fight we're going to have.* That's why we founded the Women's Tennis Association, so we would have one voice and get it done. Eventually we did. In 2007 they started paying equal prize money to men and women in the majors.

You seem to enjoy the business side of tennis.

Yes, Larry and I owned tournaments and cofounded World TeamTennis. Now my partner, Ilana Kloss, and I are part owners of teams. I want more women in ownership positions in sports. I want us to follow the money, understand it, and learn from it.

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