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AI ON THE FRONT LINES

Why frustrated end users resist adopting intelligent decision-making tools

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A Change in Perspective

Persistent problems often seem intractable because of the frame through which we view them. A fixed point of view on an issue might lead us to struggle because we are trying to solve the wrong problem.

Consider the anxiety in the workplace about the growing role of AI. Business leaders see ever wider applications for increasingly powerful technologies but worry that they don't have the right talent in place to leverage AI; meanwhile, many workers fret about correspondingly narrower options for their own human contributions. Leaders who are focused on building new strategic capabilities often dismiss employees' worries about new systems as stubbornness or an inability to learn. That narrative of change-resistant workers is reinforced only when AI implementation stalls, as it often does, due to slow adoption by end users.

The experience of AI developers working with Duke University Hospital shows what can happen when you look at the problem from a different vantage point: end users' concerns. Katherine C. Kellogg, Mark Sendak, and Suresh Balu investigated AI deployments at Duke and identified commonalities among the project teams that won user acceptance of AI implementations. From project inception, these teams worked to understand users' workloads, workflows, and need for autonomy, and they looked for ways to ensure that new AI decision-support tools didn't undermine their experience. They successfully facilitated adoption by simply looking at the issue from the end user's perspective rather than focusing only on the objectives of a project sponsor far removed from the front lines. Where managers might have seen the problem as one of front-line workers' skills or adaptability, the developers saw — and solved — a slightly different problem and were able to obtain the result the organization needed.

The expensive problem of C-suite turnover is another case where the real issues, and corresponding solutions, emerge when you look at the challenge from a different angle. While the problem might seem to be that the organization makes bad hires, research by Kimberly A. Whitler, Ed Tazzia, and Stephen Mann suggests that what's really going on is that the organization designs bad jobs. Their analysis of job specifications for 185 C-level roles, including CIO, CFO, and CMO positions, showed frequent and significant mismatches between expectations and responsibilities, to the extent that the path to success in the position was perilously narrow. They suggest ways to solve that problem — not the "why can't we get good candidates?" problem.

Finally, Jonas Solbach, Klaus Möller, and Franz Wirnsperger report on a large-scale experiment they conducted on compensation and motivation, an area where management has not shifted from a pervasive pay-for-performance approach despite years of compelling research showing that such extrinsic motivators are of limited value. Their experiment involved a large sales team that you might intuitively expect to be highly incentivized by money — but their results might encourage you to reframe the problem of employee motivation and solve it in a new way.

Elizabeth Heichler // @eheichler
Editorial Director, Magazine
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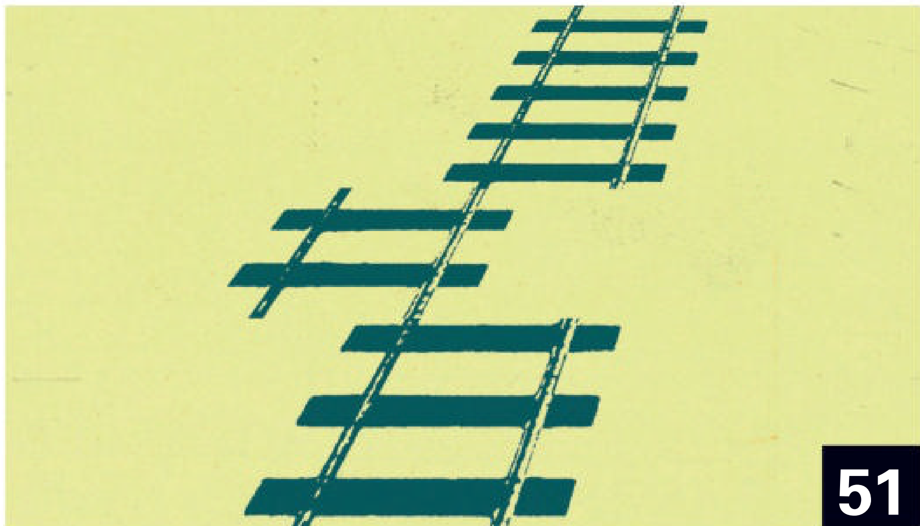

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COVER ILLUSTRATION: STEPHAN SCHMITZ

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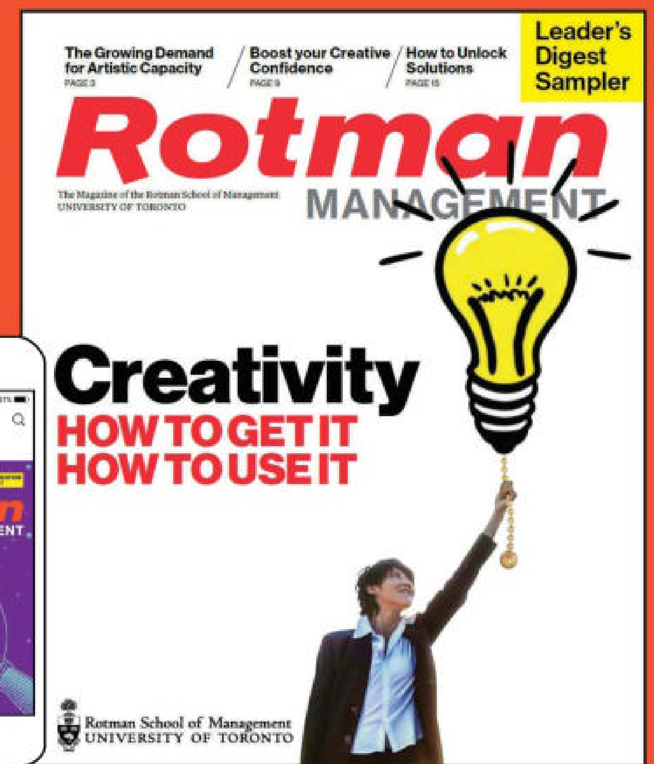

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[DATA PRIVACY]

Preserving Privacy While Sharing Data

Differential privacy can safeguard personal information when data is being shared, but it requires a high level of expertise.

BY SIMSON L. GARFINKEL AND CLAIRE MCKAY BOWEN

As organizations increasingly seek to exploit data, both for internal use and for sharing with partners in digital ecosystems, they face more laws mandating stronger consumer privacy protections. Unfortunately, traditional approaches to safeguarding confidential information can fail spectacularly, exposing organizations to litigation, regulatory penalties, and reputational risk.

Since the 1920s, statisticians have developed a variety of methods to protect the identities and sensitive details of individuals whose information is collected. But recent experience has shown that even when names, Social Security numbers, and other identifiers are removed, a skilled hacker can take the redacted records, combine them with publicly available information, and reidentify individual records or reveal sensitive information, such as the travel patterns of celebrities or government officials.

The problem, computer scientists have discovered, is that the more information an organization releases, the more likely it is that personally identifiable information can be uncovered, no matter how well those details are protected. It turns out that protecting privacy and publishing accurate and useful data are inherently in opposition.

In an effort to tackle this dilemma, computer scientists have developed a mathematical approach called *differential privacy* (DP), which works by making that trade-off explicit:

MICHAEL MORGENSTERN/THEISPOT.COM

Preserving Privacy While Sharing Data (Continued from page 7)

To ensure that privacy is protected, some accuracy in the data has to be sacrificed. What's more, DP gives organizations a way to measure and control the trade-off. Many researchers now regard DP as the gold standard for privacy protection, allowing users to release statistics or create new data sets while controlling the degree to which privacy may be compromised.

How Differential Privacy Works

Invented in 2006, DP works by adding small errors, called statistical noise, to either the underlying data or when computing statistical results. In general, more noise produces more privacy protection — and results that are less accurate. While statistical noise has been used for decades to protect privacy, what makes DP a breakthrough technology is the way it gives a numerical value to the loss of privacy that occurs each time the information is released. Organizations can control how much statistical noise to add to the data and, as a result, how much accuracy they're willing to trade to ensure greater privacy.[1]

The U.S. Census Bureau developed the first data product to use DP in 2008. Called OnTheMap, it provides detailed salary and commuting statistics for different geographical areas. It can be used, for instance, to determine how many people living in, say, Montclair, New Jersey, commute to work in lower Manhattan, along with their average age, earnings, race, and the industry in which they work. To prevent the information from being used to identify a single commuter, where they work, and how much they earn, DP adds noise to the original data by changing the number of people who live and work in each census block.

Since DP's introduction, the Census Bureau has used it for its release of the 2020 census, and the Internal Revenue Service and the U.S. Department of Education now use DP to publish statistics on college-graduate incomes. More than 20 companies have said they have deployed or are considering using DP, including Apple, Google, Meta, Microsoft, and Uber.

A controversy arose last year when the Census Bureau used DP to protect the census data used by states to draw legislative and congressional districts. All the records in the file were synthetic, generated by a statistical model created and protected using DP. Demographers and social scientists objected to the use of DP, warning that so much noise would be added that the results might be useless. Alabama and 16 other states sued in April 2021 to block the move, saying that DP "would make accurate redistricting at the local level impossible." But in June 2021, a three-judge panel denied the lawsuit's key requests, and Alabama dropped its lawsuit in September 2021.[2]

DP's ability to adjust the level of privacy protection or loss is both its strength and its weakness. For the first time, privacy practitioners have a way to quantify the risk that comes with the disclosure of confidential data. On the other hand, it forces data owners to confront the inconvenient truth that privacy risk can be adjusted but not eliminated.

This truth has often been ignored by lawmakers on both sides of the Atlantic. Privacy regulations generally aim to safeguard information that's personally identifiable — anything that makes it possible to isolate the details about an individual — and policy makers typically write these rules in black-and-white terms: Either the information is protected or it isn't. DP demonstrates that data privacy is much more complicated.

Experience has shown that *any* data about individuals is potentially identifiable if it is combined with enough of the necessary additional information. For example, researchers at the University of Texas identified Netflix subscribers by combining IMDB movie ratings with an "anonymized" list that Netflix released of movies that subscribers watched and rated. The researchers showed that individual records could be reidentified and linked to the subscriber. The company was sued under the Video Privacy Protection Act and settled the class-action lawsuit for $9 million.

DP must be applied to *all* the information that is associated in any way with an individual, not just that which is personally identifiable. This makes it possible to control how much data is released — and how much privacy is lost — based on an organization's unique needs and what it considers to be its threshold for privacy.

Privacy regulations are generally written in black-and-white terms: Either the information is protected or it isn't. DP demonstrates that data privacy is much more complicated: Privacy risk can be adjusted but not eliminated.

Three Different Approaches to DP

Privacy researchers have developed three distinct models for using DP.

The trusted curator model. An organization that uses confidential data applies noise to the statistical results it publishes for wider consumption. This is the approach used by the Census Bureau to publish privacy-protected information, such as its OnTheMap product.

The trusted curator model can protect both data that is published and data that

is used within an organization. In 2018, Uber created a DP system for internal research that included data about riders and drivers, trip logs, and information the company collects to improve the customer experience. DP enabled Uber's analysts to evaluate the performance of their systems without seeing details about individual riders and their trips.

DP-protected synthetic microdata. This is an additional approach that organizations that apply the trusted curator model can use. In this case, the organization creates a statistical model of the original data and then applies DP to the model to create a new privacy-protected model. This model is then used to create individual records. These *microdata* records might contain information about a person's age, education level, and income that produces similar statistical results when analyzed but doesn't exactly match those of an actual individual.

The advantage of microdata is that it can be distributed or repeatedly reanalyzed with no additional privacy loss. But it is difficult to create accurate microdata records that have more than a few columns of data, and they can't be readily linked with other record-level data sets because the protected data lacks identifiers such as names or Social Security numbers.

The local model. Statistical noise is added to each data record as it is collected and before it's sent to analysts (either internal or external). Google used this method to produce statistics about users of its Chrome web browser — including information about users' home pages, visited sites, and the various processes their computers were running — as a way to improve its ability to block malware without collecting sensitive information. But Google eventually abandoned the tool because "there's just too much noise," a former Google researcher said at the time. Instead, the company moved to a more

At this stage, DP is still a young technology and can be used only in limited circumstances, mainly for numerical statistics that rely on confidential data. DP doesn't work well (yet) for protecting text, photos, voice, or video.

complicated approach that combined anonymous mixing and the trusted curator model.

Overall, the trusted curator model works best for organizations like the Census Bureau that are working with data they already have. The local model is attractive for organizations that have previously held off on collecting data because of privacy concerns.

Apple, for example, wanted to learn what text people typed when they used emoji — such as whether people entered "heart" or "love" for the heart emoji — and used the local model to protect the privacy of users. With this method, an organization can say that it's applying privacy-protecting technology to data *before* it's collected.

So Is DP Ready for Business?

At this stage, DP is still a young technology and can be used only in limited circumstances, mainly for numerical statistics that rely on confidential data, such as the geographic statistics used in the OnTheMap application. DP doesn't work well (yet) for protecting text, photos, voice, or video.

Because DP has a steep learning curve, those interested in the technology should start small, with well-defined pilot projects. For instance, a local utility that was asked to share customer delinquency records could provide a DP-protected data set indicating the number of people on each block most likely to be delinquent, without identifying the individual households. An emergency assistance program could then use the data to narrowly target outreach to the blocks with the greatest risk of delinquency instead of blanketing the entire region.

DP can also be used to create privacy-protected microdata, though this approach is limited to data with only a small number of variables. For instance, Google responded to the pandemic by publishing COVID-19 "Community Mobility Reports," which showed the number of people moving daily between homes, offices, grocery stores, transit stations, and other locations. It converted the microdata — each individual location — in the form of the locations' latitude and longitude coordinates (that is, records with two columns) to the six general location categories and used DP to obscure the number of people in each category.

Companies considering DP should begin by consulting with or hiring an expert with advanced academic credentials in computer science or a similar field. (LinkedIn has hired doctoral-level privacy experts to develop its audience engagement statistics.) The most reliable information on the technology is found in highly technical academic papers, and some job postings reflect this by requiring applicants to have published technical papers or developed publicly available DP code. Attempting to use DP now without this kind of expertise is likely to lead to mistakes.

With an expert in DP on hand, an organization is in a better position to evaluate currently available DP tools, both commercial and open source, in order to determine which will best meet the needs of the use case in mind. Companies

GARY WATERS/THEISPOT.COM

Preserving Privacy While Sharing Data
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should ask: Is the technology designed to protect data that is already on hand, or information that is newly collected? If it's existing data, does it need to protect statistical results, or record-level microdata? What training, educational materials, or support does the vendor provide?

In the near term, DP may still be too complex for most organizations. However, they can improve their privacy protections today by adopting some of the principles underlying the technology, such as adding statistical noise to their data products, even if they lack the ability to precisely measure the actual trade-off between privacy and accuracy.

Simson L. Garfinkel *is the senior data scientist in the Office of the Chief Information Officer at the U.S. Department of Homeland Security, a part-time faculty member in the data science program at George Washington University, and a member of the Association for Computing Machinery's U.S. Technology Public Policy Committee. This article was written in his personal capacity and does not reflect the official policy of DHS.* ***Claire McKay Bowen*** *focuses on data privacy and confidentiality as principal research associate at the Urban Institute. Both authors formerly worked on privacy initiatives at the U.S. Census Bureau.*

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[REMOTE WORK]

The Loneliness of the Hybrid Worker

Having supportive colleagues in the workplace is key to feeling less isolated when working from home.

BY CAROLINE KNIGHT, DOINA OLARU, JULIE ANNE LEE, AND SHARON K. PARKER

Unprecedented levels of hybrid work seem likely to persist beyond the pandemic conditions that revolutionized employers' attitudes toward flexible working arrangements. Even as offices have reopened, many employees are loath to give up the benefits of working from home at least some of the time. But some two years into what has been an unplanned global experiment in remote work, the costs of that approach are coming into sharper focus.

While employees appreciate saving time, shedding the stress of commuting, and having more flexibility to balance work and personal demands, remote work has downsides that go beyond domestic distractions and blurred work-life boundaries. In particular, the quality, frequency, and nature of interactions change when colleagues are physically remote and there is less dynamic, spontaneous communication. Neuroscience research has found that only in-person interactions trigger the full suite of physiological responses and neural synchronization required for optimal human communication and trust-building, and that digital channels such as videoconferencing disrupt our processing of communicative information. Such impoverished virtual interactions can lead to static and siloed collaboration networks, workers with a diminished sense of belonging to their organization, and social and professional isolation.[1] Long before COVID-19, these issues led some to question whether the large-scale practice of remote work would create a society devoid of social connection, lacking communication skills, and less able to develop meaningful relationships.[2]

JON KRAUSE/THEISPOT.COM

In contrast, when employees are colocated in a physical workplace, they are set up for richer communication when they bump into one another in the hallway, stop by one another's desks for impromptu meetings, go out for a chat over coffee, or socialize after work. While workplaces can be noisy and full of interruptions and other distractions, collaboration and coordination among team members is easier, and individuals are more visible when career development opportunities arise.

We wondered whether hybrid work arrangements would help reduce the potentially severe social disadvantages of working remotely. The research we conducted among individuals in hybrid work situations, in which we probed for differences in their experiences working at home versus in the company workplace, indicates that in-office interactions — especially with colleagues — can indeed improve employees' job satisfaction and reduce their feelings of loneliness, even when working at home.

In May and June 2021, we surveyed hybrid workers in Western Australia, where such arrangements had persisted for more than a year even though minimal impact from the pandemic meant there was no public health need to keep employees at home. This provides insight into what we might expect to see emerging elsewhere as hybrid work persists to suit employee preferences rather than to accommodate pandemic restrictions. Our 386 survey respondents worked 33.8 hours per week on average, with 40% of that time spent at home.

We asked two sets of questions about colleague support, manager support, job satisfaction, and loneliness. One set of questions asked participants to reflect on their experiences while working from home, and the other asked them to consider their experiences while in the office. Previous research has exclusively investigated differences between individuals rather than focusing on differences within individuals' experiences.

Support From Colleagues Helps Combat Isolation — and Boosts Job Satisfaction

Our research results support the idea that spending some portion of one's working hours colocated with colleagues and managers might offset the social downsides of remote work. Survey respondents reported experiencing significantly more support from both colleagues and managers when in the office or other company workplace compared with working from home.

While a majority reported receiving the help and support they needed in both locations, open-ended survey responses point to a possible qualitative difference. One person noted that "engaging online is totally different than being present and interacting with staff," a sentiment echoed by others. Another wrote that it is "easier to complete tasks and resolve problems based in the office," suggesting a benefit not only for developing work relationships but for getting work done. Others highlighted the difficulty of team collaboration when working remotely.

We might expect workers to experience better support in the office, especially given what is known about the value of in-person communication. But the survey also uncovered somewhat counterintuitive findings about the sources of support that have the most impact: It is help from colleagues, *not from managers*, that is vital to improving the hybrid work experience, especially when it comes to loneliness.

Our survey respondents felt significantly more lonely, on average, when working from home than in the office, with 22% stating that they often or always felt isolated from others when working from home, compared with 19% who felt that way when working in the office. However, looking more closely at this data, we found that the most significant factor in loneliness was lack of support from colleagues at work. Our model took into account contextual factors such as age, gender, working hours, hours worked from home, and caring hours, but only office colleague support was a significant predictor of *reduced* loneliness — more important than managers' support at either the office or at home, and colleagues' support when working at home.

The good news in this finding is that, in the case of hybrid workers, support from colleagues when in the office can protect against loneliness. This is probably because connecting with others face-to-face enables higher-quality, more meaningful interactions to take place and increases a sense of belonging to a workplace.

That doesn't mean that support for employees when they are working from home isn't important — in fact, we found that job satisfaction depended on feeling supported by both managers and colleagues at home as well as in the office. But again, relationships with colleagues were the most significant factor. Our results showed that colleague support when working from home was the strongest predictor of job satisfaction, followed by colleague support in the office, with manager support when in the office or at home the least important predictor, again controlling for contextual factors.

How Can Managers Encourage Supportive Collegial Relationships?

Not all work environments or teammates are created equal, however, and support from colleagues may not be easy for some workers to get. So how can we promote work environments rich in colleague support? Correlational analyses revealed two key predictors of higher office colleague support that managers can influence: first, having the autonomy to schedule one's

The Loneliness of the Hybrid Worker (Continued from page 11)

work in the office, and second, experiencing little close monitoring by management.

The strongly positive and significant correlation of autonomy and higher levels of colleague support in the office suggests that it's easier to access support if one can schedule office activities to fit in with colleagues' availability. And the finding that those who are closely monitored report significantly lower colleague support in the office may be due to workers feeling untrusted when closely monitored, and tethered to their desks in order to prove their worth — a finding from a previous study.[3] This means they may feel unable to take time out, even to ask colleagues questions that would help them in their work.

Managers seeking to decrease loneliness and improve job satisfaction among hybrid workers should look for ways to foster a social climate that is rich in collegial support. Based on our research findings, we suggest that they consider the following four tactics.

Allow individuals the autonomy to decide when, where, and how they go about their work. Employees who can sync their time in the office with colleagues' are more likely to be able to access the support they need. This means allowing workers to choose which days they are in the office and to be flexible with their days, and the freedom to arrange meetings when they require them. Much research supports the view that autonomy is important for well-being and performance; our results suggest that one reason for this is that it enables workers to gain adequate social support.

Refrain from closely monitoring workers. Early in the pandemic, reports emerged of managers keeping close tabs on their newly remote workers, such as through constant messages, calls, or even electronic monitoring. These tactics can diminish productivity by leading employees to feel untrusted and stressed. Allowing employees the freedom to go about their work how they choose, without feeling surveilled, will pay dividends in employee well-being and performance.

Set up peer buddy systems for at-risk categories of workers. We found that younger workers and those with less status in the hierarchy received less colleague support. Managers could encourage these employees to partner with a trusted colleague to check in on each other weekly. New employees could be assigned a mentor who could introduce them to others in addition to supporting them; this could help new workers get a foothold socially and develop meaningful relationships with teammates.

Promote socializing in the office. Encourage morning teas, lunch meetings, or catch-up coffees to create social, warm, open environments in which employees feel comfortable connecting with coworkers and sharing work experiences.

THE NEW WAYS of working that employers adopted out of necessity in the early days of the COVID-19 pandemic have permanently changed worker expectations and added new flexibility to many organizations' policies. Hybrid work, with both its benefits and drawbacks, has been adopted by many more organizations around the world, and its full implications may take years to become evident. Our research is part of a longitudinal study that will enable us to more rigorously explore the causal relationships suggested here.

While the option to work from home was once viewed as a perk, with the implication that it was incumbent on the employee to deal with any downsides, remote work is now so widespread that organizational leaders must be prepared to manage the negative impact on social climate that can result. This will require conscientious attention to ensuring support from managers and colleagues in both the office and at home — because one source of support cannot wholly compensate for another. And it will require fostering a social environment that emphasizes colleagues supporting one another, both at home and in the office. If that can be achieved, hybrid work really might be able to offer the best of both worlds, at least in terms of job satisfaction and loneliness.

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[CYBERATTACKS]

The Ransomware Dilemma

The decision on whether to pay up when cybercriminals hold data hostage is shaped by choices leaders made long before an attack.

BY PHILIPP LEO, ÖYKÜ IŞIK, AND FABIAN MUHLY

The ransomware business is booming: In the United States alone, this form of cyberattack increased in frequency by 200% between 2019 and 2021. It's an urgent threat, but too many leaders are caught flat-footed when it happens to them. Ransomware is malicious software that uses encryption to prevent access to data on the infected machine, effectively paralyzing the computer system. The culprits behind the attack then demand payment in exchange for decrypting the files and restoring access to the infected systems. The tactic dates to the 1980s, but it became a prominent threat to businesses after 2010 with the rise of cryptocurrency, criminals' preferred mode of payment.

It's a threat riddled with uncertainties, which makes planning a response difficult. Many organizations just want to find the quickest way out, and that often means paying the ransom, even though the financial burden may be considerable and the outcome far from certain. In a recent study of 300 companies, 64% revealed that they had experienced a ransomware attack within the previous 12 months, and a staggering 83% of those paid the ransom. On average, only 8% of organizations that paid up recovered all of their data, while 63% got about half of it back.

Some organizations receive a demand for a second (and perhaps even higher) ransom, despite having paid the first one on time, but the worst-case scenario is when the victim pays but either never receives the decryption key or it doesn't work as intended.[1]

Organizations that decide not to pay also bear costs in terms of business downtime and lost revenues. And organizations that are caught unprepared, without a reliable backup system or an incident response plan, end up suffering the most — not only financially but also reputationally.

If your organization is hit with a ransomware attack, your first step should be to notify law enforcement and, if applicable, relevant data protection authorities. But the options open to you after that depend on how well your organization is prepared to handle such attacks. This article aims to help top management teams decide what to do via six clarifying questions. Considering these questions well in advance of an attack might spur you to take some critical actions that could disarm the threat or allow your organization to respond better and recover more rapidly if an attack does occur.

1 Are you technically prepared?

When the REvil ransomware gang attacked software company Kaseya in July 2021, it took the hackers only two hours to exploit the vulnerability in Kaseya's servers and install the ransomware in hundreds of thousands of downstream organizations. This is faster than most network defense systems can react. Adopting an "assume breach" mentality, which takes a zero-trust approach to systems and prioritizes detection and recovery processes, will enable organizations to think more proactively and focus on response as much as on prevention.

For ransomware in particular, having a thorough understanding of the status of backups in the organization is the first critical step in preparedness. Having a clean and up-to-date backup, as well as the ability to prevent ransomware from encrypting it, provides organizations with their first strategic advantage. Yet, just having backups is not enough in itself — organizations also need to confirm or improve their ability to recover using these backups in an emergency, with minimal loss or hiccups. This capability is still underdeveloped in many organizations: Fifty-eight percent of data backups fail during a restoration attempt. It is

A. RICHARD ALLEN/THEISPOT.COM

The Ransomware Dilemma
(Continued from page 13)

critical that organizations regularly test their ability to recover so that they don't face an unpleasant surprise when a crisis hits. And be aware that ransomware gangs try to locate and encrypt backups. Keeping backups at an offsite location and not connected to the rest of the network makes it extremely hard to find them.

In considering preparations, organizational leaders should also confirm that their IT teams have planned detailed actions in an incident response playbook and that it is up to date, well understood by relevant staff members, and practiced often. This is essential to keeping malware from spreading, hastening recovery, and preserving evidence for law enforcement. The U.S. Cybersecurity and Infrastructure Security Agency (CISA) has provided a ransomware guide that details best practices to prevent and respond to a ransomware attack, and the National Institute of Standards and Technology provides good guidance for protecting data from ransomware.[2]

Decision point: If you have a clean, up-to-date backup and confirmed ability to recover, there's no need to pay the ransom; the criminals have no leverage.

2 Do you have access to threat intelligence?

While ransomware has evolved into a multitude of types since its emergence, defenses have evolved too. Researchers who crack ransomware strains now post open-access resources online with several decryption keys. In evaluating their options after an attack, organizations should check these resources — and check with federal law enforcement authorities — to see whether a solution to their problem already exists. They should also review the threat intelligence reports offered by cybersecurity research organizations and vendors for any information about the particular criminal enterprise targeting them.

There is great value in understanding exactly whom you are dealing with, since there is no shortage of ransomware threat actors. Since the advent of the "ransomware as a service" business model, anyone can engage in this form of extortion by affiliating with a ransomware gang. Whereas some gangs are extremely selective, others offer affiliate positions to anyone willing to pay a onetime or monthly subscription fee.

Fifty-eight percent of data backups fail during a restoration attempt. It is critical that organizations regularly test their ability to recover so that they don't face an unpleasant surprise when a crisis hits.

These affiliates can launch ransomware attacks using the gang's name and receive a percentage of the ransoms paid. Many are only interested in increasing the volume of infections and don't bother to send a decryption key once the ransom has been paid. Whether the ransomware gang attacking you is known to send a functioning encryption key can be a critical piece of information that informs your choice.

Decision point: If you have access to relevant decryption keys, you will likely be able to restore data without paying; if you have only threat intelligence about the culprits, that can inform whether payment is likely to yield the desired result.

3 Do you have cyber insurance, and what does it really cover?

A number of insurance companies started offering cyberthreat coverage in the early 2000s, and the market has been developing ever since. The emergence of ransomware as a significant risk has radically increased premiums: Ransomware attacks currently account for 75% of all cyber insurance claims. As a result, several major insurers, such as AXA, will no longer cover ransom payments, only the cost of lost business. And with ransomware attacks suspected of being state-funded, like the NotPetya attack in 2017, an insurer may choose to classify the attack as an act of war that frees it from its liability to pay the claims. Leaders should understand the terms and conditions of their cyber insurance policy and whether it provides ransomware coverage *before* they experience such an incident.

Decision point: If your cyber insurance covers ransoms, paying the ransom might make sense if you have no other way to recover your data.

4 What is your financial exposure?

Get a handle on recovery costs: Calculate how much the potential business fallout and recovery of lost data would cost your organization. Doing so will not only give you a good understanding of the trade-offs of not investing in information security but also will help you assess whether paying the ransom is an economically reasonable option should you have no others.

Decision point: If payment is feasible and less than the costs of recovery, it remains an option in the absence of other routes out of the mess.

5 What are the legal implications of paying a ransom?

In the absence of up-to-date, complete backups and a well-rehearsed recovery plan, or

comprehensive insurance, some organizations will decide that their only option is to pay a ransom. But even this route may be blocked in some cases for organizations operating under U.S. jurisdiction (or where the person responsible for executing the payment is a U.S. citizen). In September 2021, the U.S. Department of the Treasury issued a reminder that making or facilitating ransom payments to cybercriminals on which it has imposed sanctions is illegal and can result in criminal prosecution. Although European authorities are also discussing putting legal restrictions on ransomware payments, none is currently in force. Paying the ransom might seem to be a reasonable way out, but it could create new legal challenges. Precise knowledge of the jurisdictional framework and the threat actor you're dealing with is essential.

Decision point: If paying the ransom doesn't put the organization or any personnel in legal jeopardy, it remains an option for resolving the situation.

6 Can you negotiate?

Even if organizations decide that paying ransom is the least damaging route, they should consider bringing in professional negotiators if they have established direct contact with the extortionist. We have seen instances, such as the case of the South Korean web hosting provider Nayana, where victims were able to reduce the requested ransom significantly with the help of negotiators. In some cases, the paid ransom was less than half and sometimes even only a tenth of what was originally requested.[3] But it is important to note that some ransomware gangs threaten to delete the decryption key, destroying all hope of system recovery along with it, if their victims hire professional negotiators. Here, the threat intelligence we discussed earlier may be useful to assess the risk.

Decision point: If there is no chance of getting in touch with the people blackmailing you, paying the full amount or accepting the consequences of recovery might be the only option.

IT BEARS REPEATING: If your organization is the target of cybercriminals, report your experience. No matter what you decide to do about paying the ransom, we encourage you to bring any ransomware incident to the authorities. A new U.S. law will require businesses in sectors deemed critical infrastructure to report ransomware attacks promptly to CISA. In Europe, the General Data Protection Regulation includes cyberincident-reporting obligations as well. Cyberattacks can be investigated more effectively if experts have access to information about similar incidents and the cooperation of affected parties. Also, in a rapidly evolving environment, the best opportunities to learn can be others' experiences, and that requires disclosure. There are already several initiatives to promote intelligence sharing among a trusted network of peers.[4]

> Most current cybersecurity spending goes to prevention capabilities, such as antivirus/anti-malware or multifactor authentication, and thus detection, response, and recovery processes are overlooked.

In an ideal world, the ultimate solution to the ransomware epidemic would be to not pay cybercriminals. But for many organizations grappling with the economic implications of COVID-19 or prioritizing budgets around digital transformation initiatives, cybersecurity investments are still underbudgeted. Most current spending goes to prevention capabilities, such as antivirus/anti-malware or multifactor authentication, and thus detection, response, and recovery processes are overlooked. Until every organization invests to get its cyber hygiene level up to a minimal standard, executives will have to live with the reality of ransomware threats and accept that paying a ransom is sometimes a valid choice. The suggestions in this article may not be sufficient to fully mitigate the effects of a ransomware attack on a company, but we hope that reflecting on them will help executives feel prepared and keep calm during the critical decision-making process.

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[CREATIVITY]

Improve Creative Brainstorming With Constructive Criticism

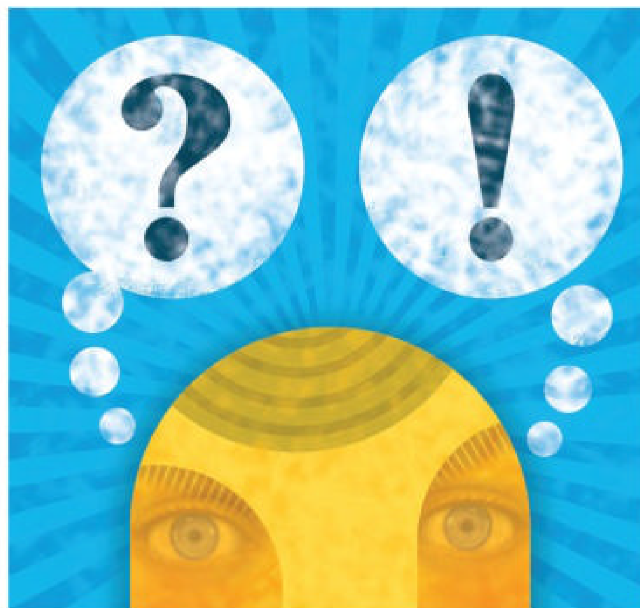
Does criticism help or hinder creativity in brainstorming? It depends on the context.

BY JARED R. CURHAN

Anyone who has ever participated in a group brainstorming session knows the ground rules: Focus on quantity, not quality. Be open to far-fetched, outlandish ideas. And above all, don't criticize. Those principles were conceived in the late 1940s by Alex Osborn, a partner at the esteemed New York City advertising agency BBDO and the unofficial godfather of brainstorming. Osborn believed — and numerous studies back him up — that to maximize creativity, brainstorming should be freewheeling and nonjudgmental. "Creativity," he said, "is so delicate a flower that praise tends to make it bloom, while discouragement often nips it in the bud."

Recent research, however, has cast doubt on Osborn's "no criticism" rule. A growing number of studies show that criticism might actually heighten creativity and imagination. Forcing participants to suspend judgment about the quality of ideas during brainstorming could in fact stifle free thinking and expression.

So does criticism help or hinder creativity in brainstorming? My colleagues Tatiana Labuzova, Aditi Mehta, and I set out to resolve this debate. Our research (Curhan, Labuzova, and Mehta, *Organization Science*, April 28, 2021) suggests that the answer depends on the brainstorming context — either cooperative or competitive.



The Effect of Criticism on Brainstorming

First, we conducted a field experiment in which we evaluated 100 group brainstorming sessions with stakeholders in a controversial urban redevelopment project near Boston. For half of the sessions, facilitators discouraged criticism, and for the other half, facilitators encouraged participants to critique ideas as they were being generated. We found that the effects of each approach varied greatly depending on context.

Criticism can increase creativity in a cooperative context. In our experiment, half of the brainstorming groups were told that all ideas — regardless of feasibility or merit — would be presented to the planning committee. Those instructions cultivated a cooperative atmosphere, and we found that instructions encouraging criticism within these cooperative groups yielded not just more ideas, but more creative ideas. When the group members' goals are aligned, criticism is likely to stimulate creativity.

In a competitive context, criticism can decrease creativity. The other half of the brainstorming groups in our study were told to select their group's best idea to be prioritized above all the others, thus creating a competitive environment. We found that encouraging criticism in these groups yielded fewer ideas and less-creative ideas as evaluated by judges. This finding suggests that criticism can indeed have a negative effect on creativity if the nature of the group or its task is competitive, mainly because the criticism may be construed as destructive and can trigger intragroup conflict.

Even holding constant the wording of the criticism, context matters. While much attention has been given to the phrasing of criticism and negative feedback, in a follow-up study, we found that the context in which criticism takes place, whether cooperative or competitive, is actually highly impactful. In this experiment, we used a labor negotiation scenario. Participants were always in the role of the union member negotiating with management, and the criticism they received was always the same: "That idea doesn't make any sense." We chose that statement precisely because of its ambiguity. It could come across as constructive, as in, "Please elaborate." Or it could sound hurtful, as in, "That's a stupid idea."

We found that the setting affected how participants perceived the identically phrased criticism. When the criticism came from a fellow "union member" — a cooperative context — the criticism was interpreted constructively and led to greater creativity. Conversely, when the criticism came from "management" —

GORDON STUDER/THEISPOT.COM

a competitive context — that same criticism was construed as destructive and resulted in less creativity.

Set the Context for Creativity

Leaders need to fully understand their team's dynamics and adapt brainstorming instructions accordingly to benefit most from the group's setting and context. For example, if team members are generally collaborative and supportive of one another, then encouraging a bit of criticism and debate could help spark new ideas. But if team members tend to be competitive with one another, then encouraging criticism and debate could backfire. Team members may edit themselves to avoid being criticized by their colleagues — which undermines the group's creative process.

To be sure, there is no one-size-fits-all, best way to brainstorm. Much depends on the organizational context and the nature of the brainstorming task. In some scenarios, it might be best for managers to assign one team to come up with ideas freely (with criticism encouraged) and another team to review those ideas and select the best ones. Yet, taken together, our findings suggest that the optimal context for creativity in brainstorming is a cooperative one in which criticism occurs but is interpreted constructively by parties who understand that they are working toward the same goal.

Managers should keep in mind that Osborn was only half right about the effect of criticism on brainstorming. In certain contexts, criticism can wilt the "delicate flower" that is creativity. But in others, it can help plant the seeds of new ideas.

Jared R. Curhan *is the Gordon Kaufman Professor and an associate professor of work and organization studies at the MIT Sloan School of Management.*

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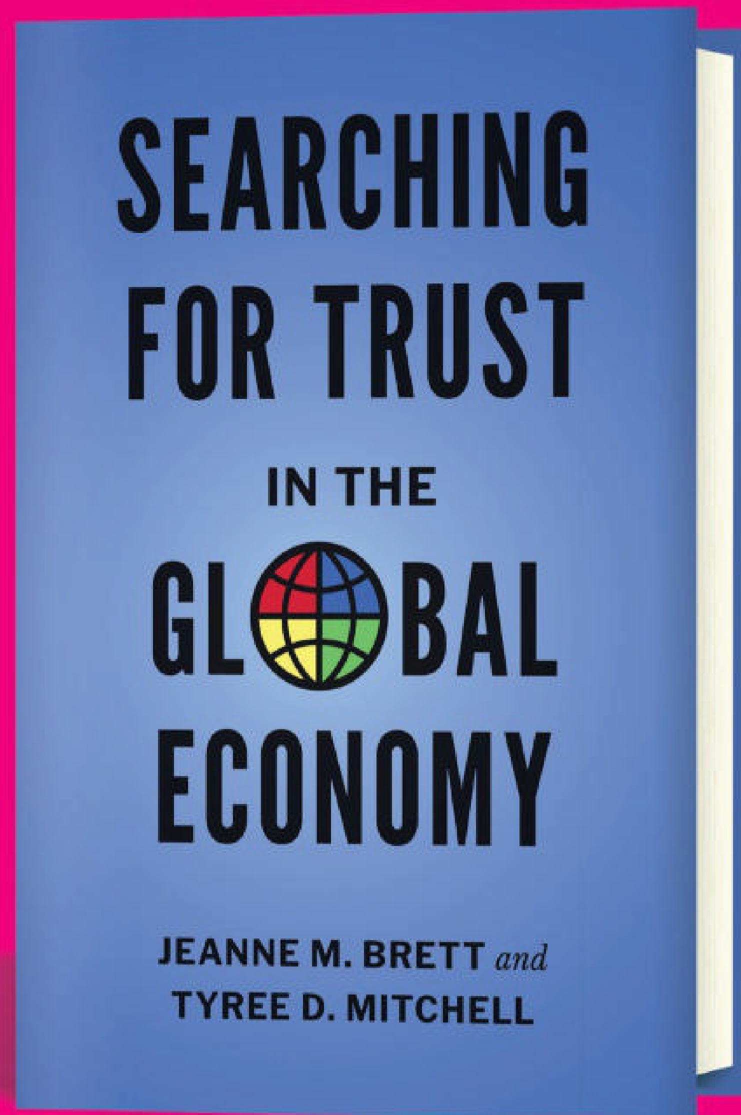

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Working Values: How Purpose, Morals, and Meaning Build Stronger Organizations

VISIONARY LEADERS ARE DEMONSTRATING that a foundation of positive core beliefs, a unifying higher purpose, and a strong ethical code create fertile ground for employee engagement, customer loyalty, and organizational growth.

What makes a corporate purpose statement effective, and how do you embed its logic throughout the organization to become truly purpose-driven? Based on extensive research and consulting with companies engaged in such efforts, Álvaro Lleó de Nalda, Alex Montaner, Amy C. Edmondson, and Phil Sotok describe a new framework for implementing a corporate purpose that engages employees and drives their daily actions.

Next, we learn how powerful values can be when they are wielded as organizing principles for effecting change, particularly to advance diversity, equity, and inclusion (DEI) goals. Anselm A. Beach and Albert H. Segars set out to investigate how organizations that are known for innovation and are also committed to DEI might approach this work differently than others do. What they observed yielded a new model, based on cultivating a set of values and following certain principles, that has measurably increased employee satisfaction at the organizations they studied.

For corporate purpose and values-based initiatives to be effective, they must connect with employees' own needs for meaning. But as Marjolein Lips-Wiersma, Catherine Bailey, Adrian Madden, and Lani Morris write, it can be difficult to have conversations about existential questions in the workplace. They provide managers with a guide not only to starting such conversations but also on listening for the many ways that employees communicate where they find — or lose — meaning at work.

And finally, Antoine Ferrère, Chris Rider, Baiba Renerte, and Amy C. Edmondson share new research showing yet another reason to prioritize a climate of psychological safety in the workplace. They found that doing so is critical to the effective functioning of employee reporting channels meant to alert management to lapses in ethical conduct.

— ***The* MIT SMR *Editors***

SPECIAL REPORT

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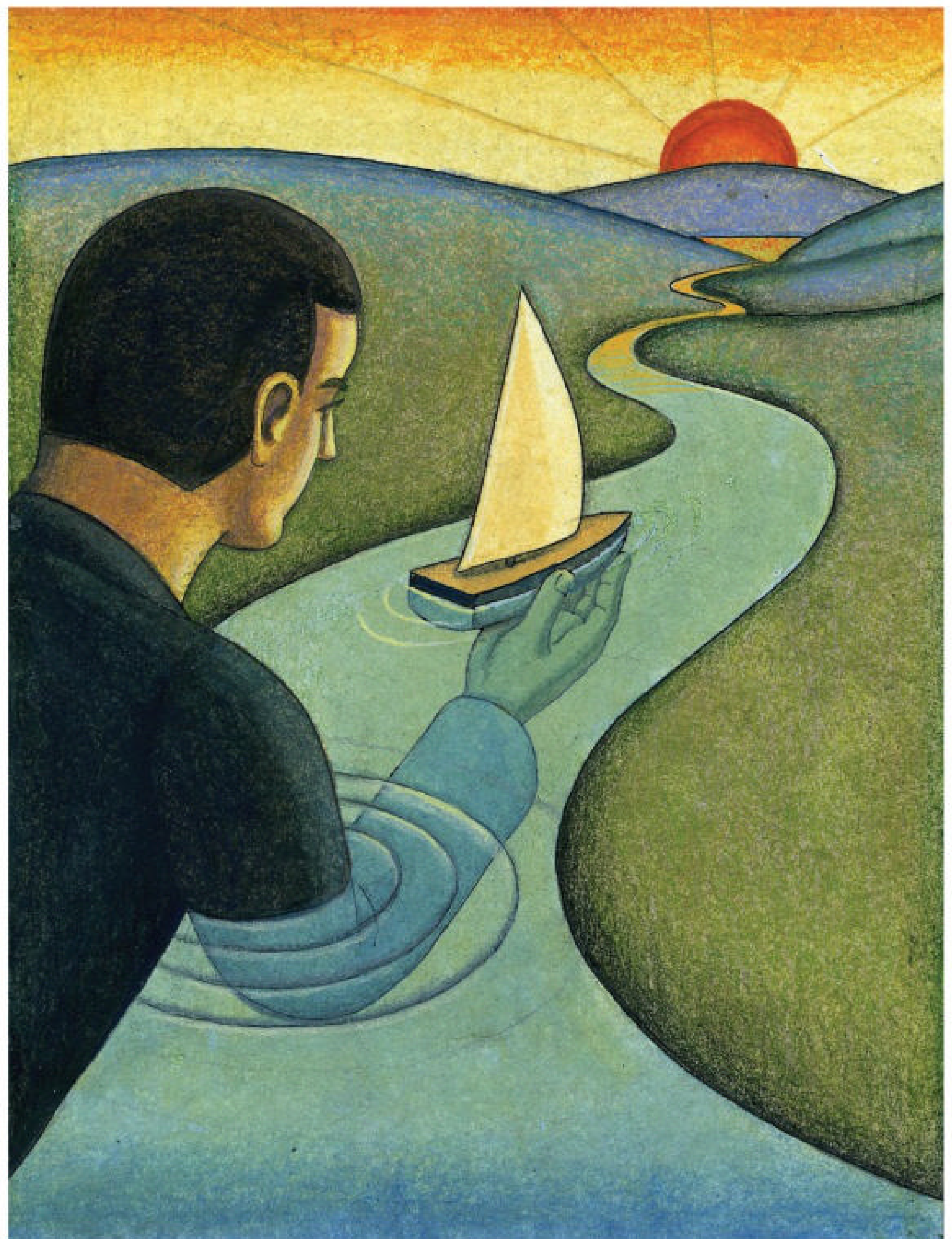
Unlock the Power of Purpose

A new framework helps companies derive business value from a clear, consistent corporate purpose that drives collaboration, innovation, and growth.

BY ÁLVARO LLEÓ DE NALDA, ALEX MONTANER, AMY C. EDMONDSON, AND PHIL SOTOK

Companies that have defined a values-based core purpose for their existence and pursue strategies aligned with that raison d'être can gain many advantages: greater focus, more engaged employees, more loyal customers, and better financial performance.[1]

It's no wonder that developing a purpose statement is now on many business leaders' agendas — especially as employees increasingly question their organization's impact on communities and the planet.[2] But if companies do little else with the statement than post it on their website, there's little likelihood that it will confer much benefit.



Purpose is not a lever that can be pulled; rather, as our research has confirmed, it exerts its power as a deeply held commitment that is shared throughout an organization and motivates action. The identity of the organization, its role, and the reasons why that role is meaningful and valuable all flow from that shared commitment.[3] Purpose makes a difference in organizations only when it changes the way people operate.[4]

For purpose to have a transforming and lasting impact, leaders need a deliberate, sustained approach to identifying, operationalizing, and measuring it. Our earlier research identified a set of key elements for defining and developing a solid purpose. We have subsequently developed a set of processes we call the Purpose Strength Framework. (See the "Purpose Strength Framework" at https://sloanreview.mit.edu/x/63427.) Here, we'll explain how companies can use it to turn intention into consistent action that yields the benefits of being a purpose-driven organization.

How Purpose Gets Its Power

The power of purpose comes from its capacity to link people through a shared belief about the identity, meaning, and mission of the organization.[5]

PHIL BLISS/THEISPOT.COM

Purpose inspires people by illuminating the priorities of an organization that most naturally flow from its identity: its history, why it exists, and its ultimate aim. It creates a sense of meaning by connecting the work people do with their feelings and values so that they will act from the heart. And it helps to clarify how the organization contributes to each stakeholder. In these ways, purpose guides the daily actions of people within a company.

Shared belief in identity, meaning, and mission derives from a purpose that is authentic, coherent, and has integrity.[6] To be *authentic*, it must express what people in the organization feel is important. It is *coherent* if it is consistent with the work that the organization performs day to day. *Integrity* springs from meeting the first two conditions, and from the company staying true to its purpose even when it hurts the bottom line. Our research has found that when all three criteria are present, employees are twice as likely to go beyond the call of duty and do things for customers, colleagues, and their organization that are not strictly required by their jobs.[7]

We worked with a European consumer electronics retailer whose purpose was conveyed with a clear, simple message — "Do right by the customer" — that encouraged employees to use their judgment when providing service. This implicit autonomy let every salesperson see customer interactions as opportunities to create their own legacy of great customer service. Employees were constantly reminded to define service from the customer's perspective, ask customers questions about their specific needs and preferences, and go beyond expectations. The purpose was one that employees could understand, identify with, and contribute to.

An effective purpose also must be dynamic. Leaders need to stop from time to time and ask, "How are we living our purpose? How can we do it better?" When everyone in the company contributes to these reflections, the purpose can become even more powerful and more deeply shared by employees, because it integrates their views.

As with any major initiative, implementing purpose requires the full commitment of top management. Purpose can have an impact only if senior leaders thoroughly embrace it and are prepared to make changes in how the company conducts itself to align its daily operations toward the purpose.

THE RESEARCH

The authors evaluated purpose initiatives at more than 50 companies in 11 countries.

They identified the key principles and actions with which organizations activated and implemented corporate purpose.

These principles and practices formed the basis of the Purpose Strength Framework, which can be used to guide the development and implementation of an organizational purpose.

The majority of the studied companies are clients of the consultancy DPMC and/or are sponsors of the Chair of Management by Missions and Corporate Purpose at the Universitat Internacional de Catalunya, Barcelona.

That purpose must also align with the company's strategy. The organization might define its purpose and then develop a strategy that flows from this purpose, or it might start with a strategy and assess its strategic initiatives through the lens of its purpose. Either way, a successful purpose implementation process requires a *purpose-based business strategy* that makes explicit the proposed shared value that stakeholders and the company will derive.[8]

When senior management is on board and leaders have established a clear connection between the company's purpose and its business strategy, they can begin to incorporate the purpose into operations. Doing so relies on three processes: *purpose knowledge*, *purpose internalization*, and *purpose contribution*.

Know Your Purpose

Before employees can work toward the company purpose, they need to understand what it is and how it connects to business strategy, and be able to explain it in their own words. Managers across the organization help to develop *purpose knowledge* by clarifying for their teams how business decisions are made based on the corporate purpose. Leaders should constantly look for opportunities to communicate purpose and manifest it in the organization, making purpose visible to ensure that it's expressed explicitly and informally in daily conversations. The goal is for people to feel the presence of purpose in everything they do and see around them.

The medical equipment company Vygon renovated its facilities in Spain to reflect the company's purpose: to value life. Business leaders aimed to convey two essential aspects of this purpose: that its people take care of one another, and that they can express optimism about their work. Although the company wanted all stakeholders who came through the company's doors to understand its purpose, the design of the facility, dubbed the "optimistic building," put employees first by creating a work environment that would make people feel at ease. Every space was designed to manifest the company purpose so that employees themselves can experience it.

Connect Purpose With Employees' Values

It is not enough for just leaders and managers to know how their work contributes to the company

purpose. Through the process of *purpose internalization*, every employee becomes empowered to connect the purpose of the organization with their individual values. Purpose internalization is accomplished through explicit processes that help employees connect the company purpose to their own values.

For example, workplace services company ISS uses a program called Find Your Apple that helps its approximately 500,000 employees discover how their purpose relates to the company's. The Danish multinational offers cleaning, catering, and maintenance services; its purpose is "connecting people and places to make the world work better." One participant in the program, a patient porter in a hospital, came away with this personal purpose: "I give patients that extra push on their way to recovery." He further specified that he "treats patients with respect and dignity while transporting them safely ... establishing a welcoming environment and accommodating the many international patients in a warm and hospitable way." The porter's personal purpose not only connects concretely and explicitly with ISS's purpose but also guides his decisions and energizes him.

Efforts like these to internalize purpose can give meaning to daily work as well as increase employee engagement, commitment, and loyalty. And when employees can find meaning for themselves, they enhance the experiences of customers and other external stakeholders. Furthermore, as people take individual responsibility for realizing the company's purpose because they believe it is worth achieving, they demonstrate leadership that influences their colleagues in positive ways.

To enable employees to make these connections, however, leaders must build a climate of healthy, authentic interpersonal relationships in which people feel safe to reflect on the ways that the values of the organization coincide with their personal values.[9] Throughout the process, individuals need to be able to speak their concerns and ask questions while trusting that their colleagues and managers will not reject them for doing so.

Measure What Purpose Contributes

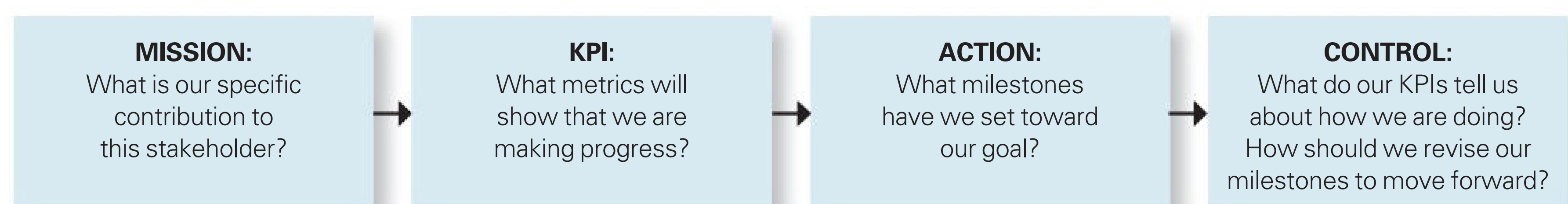
The final process for implementing purpose, *purpose contribution*, ensures that the corporate purpose is reflected in the organization's operations. This process looks both backward, by measuring how a company has fulfilled its purpose in the past, and forward, by identifying what actions the company can take to continue to do so.

A company might use a purpose scorecard as a way to show how it is performing against metrics that measure how it has contributed to its purpose.[10] While some existing key performance indicators may serve as useful metrics, business leaders might need to create new ones to track outcomes that have not previously been measured. For example, plastics manufacturer Elix Polymers developed a purpose scorecard that shows each department's progress toward the company's shared mission. (See "Tracking Purpose Impact.") The use of a purpose scorecard in this way can help middle managers connect their key metrics to purpose, resulting in higher employee identification with and contributions to the company.

When imagining the future, business leaders will want to consider whether the company's management systems and processes help or hinder it in achieving its purpose. When these elements are misaligned, the company is two-faced: Its publicly stated purpose does not match what employees experience. When they are aligned, however, they provide clarity, generate trust, and reinforce leadership authenticity.

TRACKING PURPOSE IMPACT

A scorecard enables business leaders to visualize what each team contributes toward its purpose (focused on service, innovation, and understanding customer needs) and how it is managed and advanced. This helps the company validate that it is executing projects and developing processes that are aligned with its purpose.



For example, companies often need to adapt their people-management systems to achieve a meaningful connection between what employees do and the company's purpose. The Valencia, Spain, technology center Ainia realized that it needed to adjust its hiring, onboarding, appraisal assessments, and compensation packages in order to deliver consistent messages to employees about how they would be evaluated and rewarded for contributing to the corporate purpose. Among the changes, Ainia shifted from a compensation system that rewarded employees primarily for generating revenue to one that focused more heavily on certain indicators of performance related to its purpose, such as social return on investment or customer satisfaction. Had Ainia continued with the prior compensation model, employees would have felt little incentive to work toward the purpose.

WHEN AN ORGANIZATION has set in motion the three processes of purpose knowledge, purpose internalization, and purpose contribution, it has turned on the machinery of purpose implementation. Once this machinery is up and running, it needs to be oiled regularly to ensure continued consistency between what the purpose says and what people in the company do.

Communication serves as a vital lubricant, linking the organization's internal identity to its external actions. A company owes much of its success with purpose to how well it communicates its internal identity and how what it does in practice manifests its purpose. When the three purpose implementation processes are in place, connecting every aspect of the organization through purpose can be constantly renewed through well-tuned communication.

It's also important to periodically assess the current reality of the organization to evaluate the intensity of purpose in the culture. Pulse surveys can gauge how much employees connect their work with the purpose. Leaders should also look for signs of purpose intensity, such as high levels of individual commitment and collective unity as evidenced by productive collaboration.

Both of these approaches should lead to improvements in measures of organizational performance, such as financial results or employee retention statistics. When individuals and teams see their daily work as contributing to purpose, and purpose-aligned strategies deliver objective business results, leaders will know they have unlocked the power of purpose.

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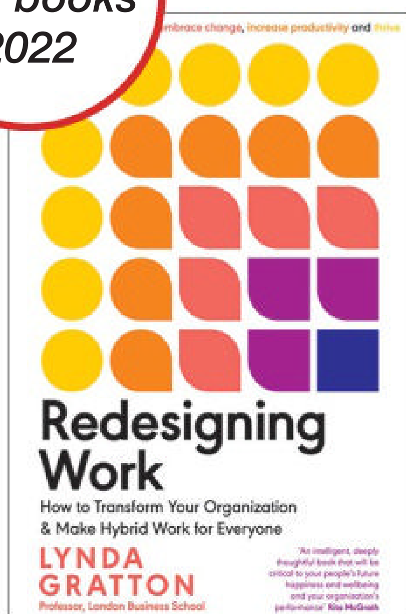

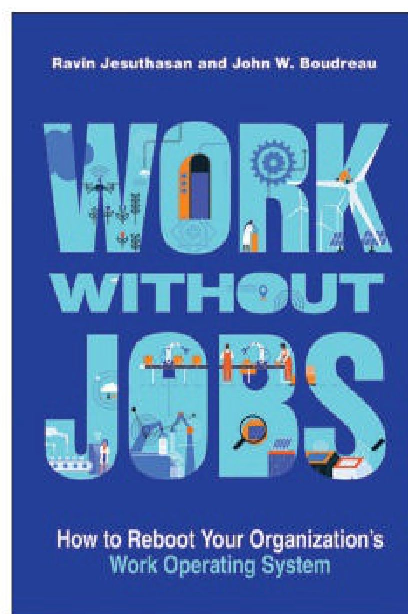

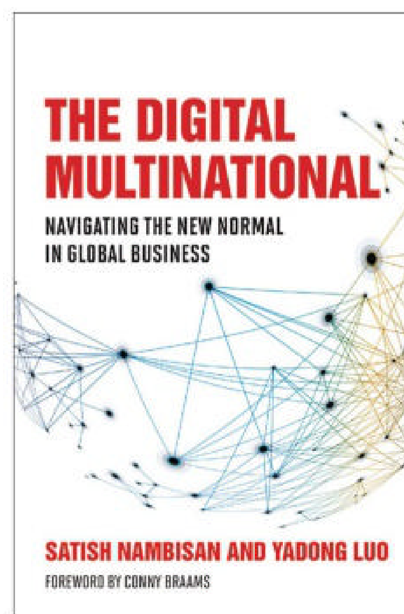

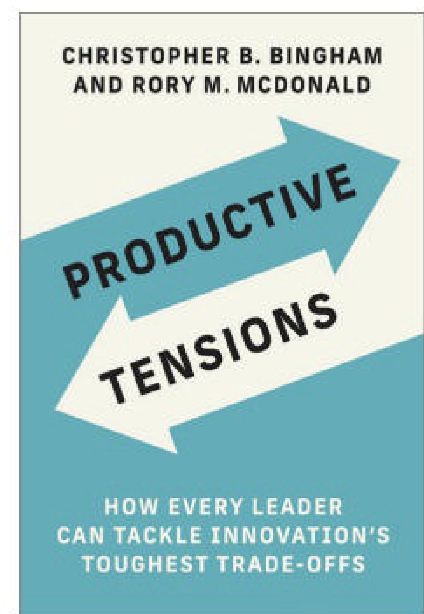

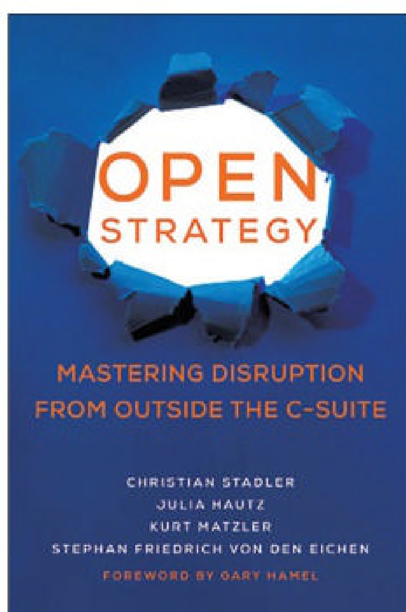

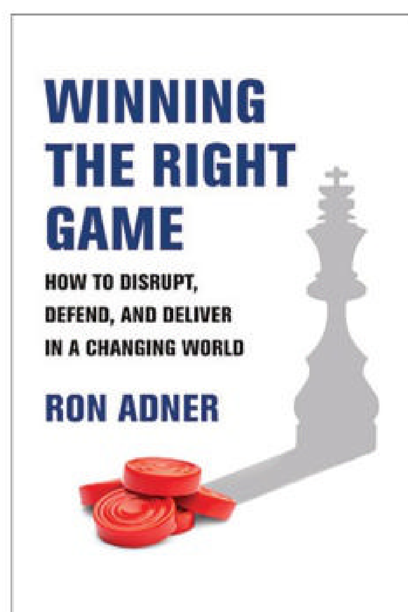

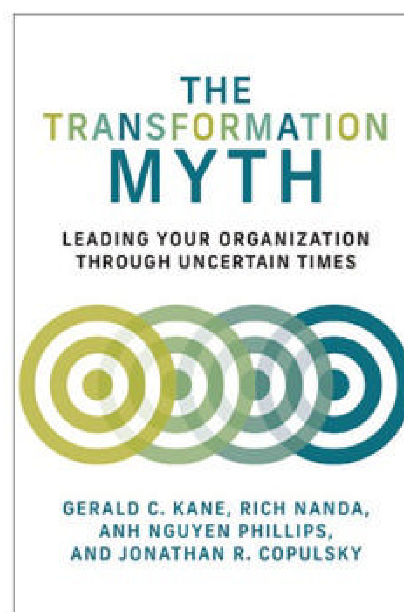

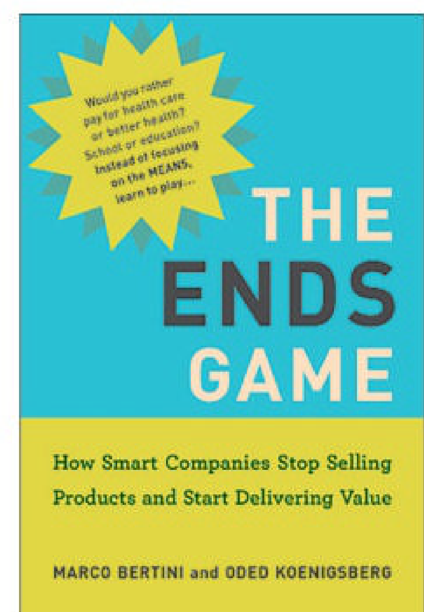

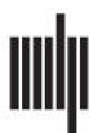

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How a Values-Based Approach Advances DEI

A new model for developing diversity, equity, and inclusion in the organization can increase employee satisfaction.

BY ANSELM A. BEACH AND ALBERT H. SEGARS

Many business leaders see diversity, equity, and inclusion as a way to revitalize their organizations. They understand that diversity drives innovation, and they see the potential for engaging the entire workforce in transforming their companies. But they also find that the results of their DEI efforts sometimes fall short of expectations.

Perhaps these efforts are clumsy due to unclear objectives or a lack of know-how. Business leaders may not approach DEI with the same ambition, creativity, and energy that they bring to launching new products or pioneering new markets. Furthermore, some people may not consider a lack of DEI to be holding the organization back — or, if they do, they think it's not their problem to solve. Meanwhile, experts propose interventions that purport to offer quick fixes to workplaces that have been shaped over decades. No wonder leaders become fatigued: They are uncertain about what to do, and it can be difficult to cut through the noise.

Clearly, leaders need approaches that frame DEI as an opportunity for their entire organization and provide an avenue for *all* members to meaningfully engage in it. Through surveys and field studies of companies that have demonstrated significant progress toward DEI, we have identified such an approach: the Values/Principles Model, or VPM. The model is based on four values — *representation*, *participation*, *application*, and *appreciation* — along with seven guiding principles that drive the achievement of the values. The VPM provides a structured and measurable framework for transforming the workplace through DEI. (See "The Research Behind the Values/Principles Model," p. 26.)

Why We Need a New Model for DEI

A typical approach to DEI includes diversity training, pre-employment testing, performance reviews, and

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grievance systems, all of which aim to limit bias in recruiting and promotion. While better than nothing, these processes and policies are primarily designed to prevent litigation and to change (or train) people. Unfortunately, they do not change the heart and soul of the organization or the way it operates.[1]

Senior leaders might stand up a committee or designate a person to take charge of DEI to demonstrate that they are taking action. However, making DEI the responsibility of a czar or steering committee rather than engaging the community as a whole sidesteps the work of transforming the organization into one that thrives because it embraces diversity. A steering committee will rarely have the clout to rigorously question or change business processes — including personnel practices, reward systems, and how meetings are run — that may exclude diverse voices.

These approaches derived from an industrial view of the workforce as a set of interchangeable parts and employment as a transaction. Companies pay employees to perform a set of predefined tasks; it doesn't matter what else they know, how they think, or what their talents might be. In this view, DEI is transactional too. The organization complies with the law by hiring people of differing identities and holding a "diversity day" to publicize them, without changing how it operates.

For leaders seeking to transform their organizations through DEI, the VPM provides ways to both articulate and measure where an organization stands in its journey and where it needs to go. It also provides a way to engage the entire organization, by giving everyone — senior leaders, middle managers, and rank-and-file employees — a role in the measurement, achievement, and stewardship of DEI. It is focused on changing organizations, not individuals. After all, people build organizations and then are shaped by them; rebuild the organization, and you reshape people's perspectives.

We found overwhelming evidence that the VPM values not only provide a standard for measuring distinct aspects of DEI but that they operate together, forming a belief system that guides attitudes and motivates the actions of people within an organization. (See "Four Core Values of Diversity, Equity, and Inclusion.") We learned not only that workplace satisfaction (a measure of how employees feel about their work environment and career opportunities) is higher when all four values are achieved simultaneously but that overattention to one value at the expense of the others may undermine the overall results.

For example, if you create a marketing campaign that includes people of different races and genders (representation) but you don't invite diverse team members into product discussions (participation, application) and recognize their contributions (appreciation), all you are doing is creating an impression of diversity without addressing policies and practices in the workplace that undermine it.

Think about the values as the destination to reach: They describe what an organization may become. The seven guiding principles, which we will describe later, provide the directions to the destination.

Let's look at the four values in more detail.

REPRESENTATION

Representation is rooted in the idea that diversity is an asset: When we recognize people for their individuality and unique voice, our experiences become richer and more profoundly human.

However, when organizations view representation primarily through a lens of social categories,

THE RESEARCH BEHIND THE VALUES/PRINCIPLES MODEL

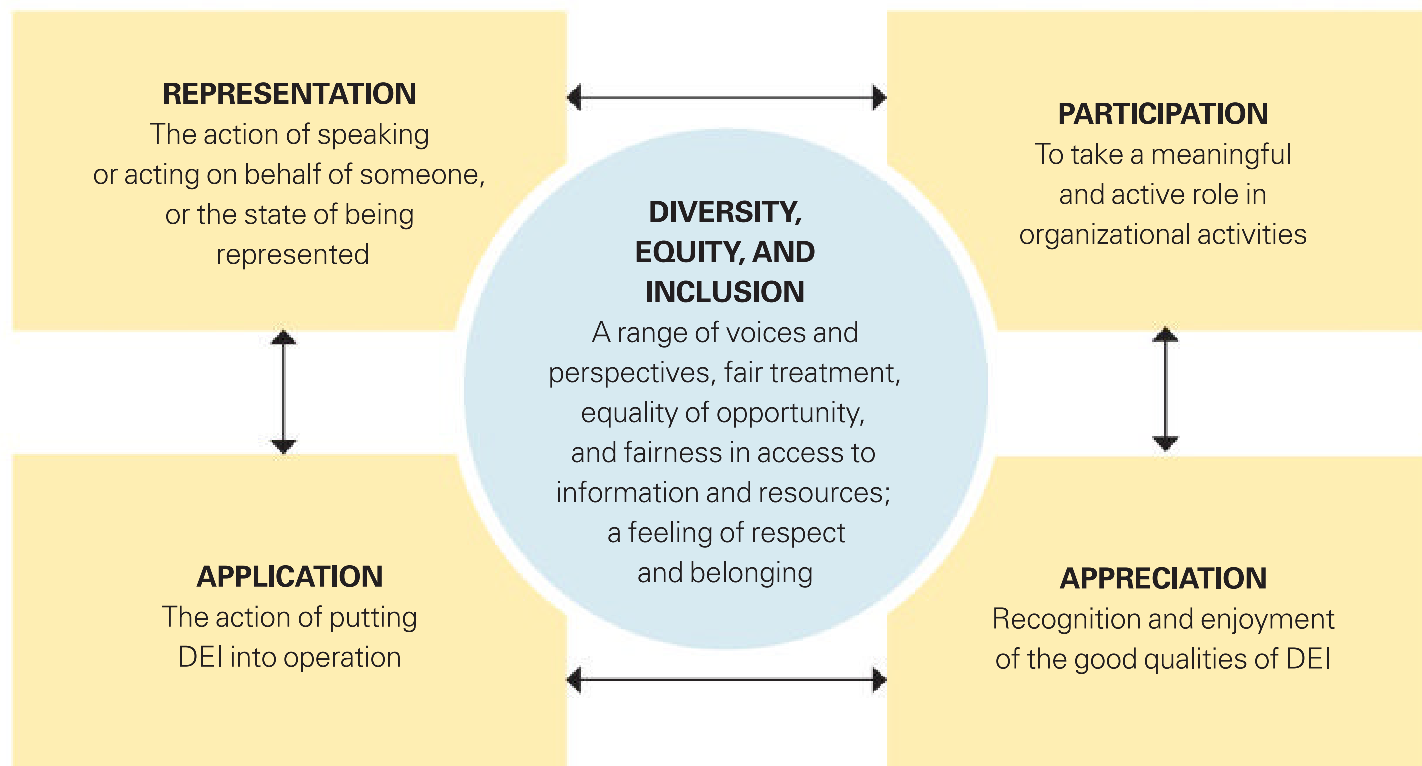
We identified the four values and seven principles that lead to transformational change in a multiyear field study of 17 organizations that have been recognized for their innovativeness and effectiveness in DEI by multiple sources that rank businesses, including Glassdoor, *Forbes*, and *Fortune*.

In the first phase of our research, we conducted in-depth interviews with 55 executives, 33 middle managers, and 73 team members in the organizations about their diversity, equity, and inclusion goals and what they considered to be an effective path to achieve them. Analysis of these interviews yielded the values and the principles. We tested the model by surveying a diverse set of 350 employees in the same organizations, asking them to rate the degree to which the principles had been applied and values achieved. These respondents also assessed overall workplace satisfaction, which is a reliable metric for understanding how employees feel about their work environment and opportunities for advancement.

We validated the model further with a second round of surveys, this time of general managers from 113 Fortune 250 companies. Using the same approach as for the initial phase, we asked HR professionals in each company to recommend two respondents, one of whom identified as a member of an underrepresented population. Many companies asked for an additional pair of respondents to complete the survey, resulting in 430 total responses. The second survey confirmed the results from phase one.

FOUR CORE VALUES OF DIVERSITY, EQUITY, AND INCLUSION

Organizations that devote attention to all four values rather than one or two see higher rates of employee satisfaction.



such as race, gender, or sexual orientation, people can become identified with these categories, and their uniqueness as individuals is overlooked.[2] Meaningful representation requires that marginalized people not be included merely for appearances or to fill a quota. Rather, organizations must remove barriers to demographic representation while also embracing individuals' unique skills, backgrounds, and contributions.

When an organization includes people with diverse sociocultural, educational, *and* economic backgrounds and experiences, it signals that many types of people with different perspectives can succeed there. Representation doesn't just empower those who have been denied a presence; it encourages us to learn about and learn from people who are unlike us. To that end, when we describe who is represented in our organizations, we should capture both what is visible about them (who they are) and their less visible backstories (why they are there).

An example from our research, Marvel Comics, illustrates the point. Marvel sought diversity and inclusion by introducing ethnic minority characters into roles traditionally held by White characters (Black Captain America and biracial Spider-Man, for example). On the surface, adding diverse characters seems to signal representation. However, readers preferred to see the universe of characters expanded.[3] When Marvel created new characters with logical and compelling backstories (such as the Spider-Man Universe), the result was transformative. Readers saw themselves in the characters, and these characters created opportunities for new storylines.

When leaders ask not only "Who are we hiring?" (their demographic characteristics) but also "What do they bring to the organization?" (their skills and backstories), and "Who shows up?" (their contributions), they expand the capabilities of the organization, its talent pool, and the range of possible business outcomes.

PARTICIPATION

Many organizations stop at representation. Once underrepresented people are hired and that fact is publicized, business leaders declare victory.[4] Our research suggests that there is more to accomplish. A person in a previously underrepresented group can see more people like themselves in the workplace but still feel discouraged from participating equally with those in the majority. Representation without participation is still exclusion. The same is true for participation without representation. If you include one person from an underrepresented group on a committee or management team, you will gain participation from that group. However, that person may not represent the variety of views

and experiences of their demographic. Deeper engagement with each community is required to achieve both participation and representation.

When an organization pursues participation as a value, it creates an environment in which everyone feels free to share their knowledge and is able to make a contribution. Walt Disney Imagineering, another company we studied, offers a great example. "Imagineers" design and build everything for Disney theme parks, resorts, attractions, and cruise ships. They are a diverse group with a clear sense of belonging based on well-defined and logical sets of roles, responsibilities, and contributions.[5]

Disney promotes their participation by eschewing formal meetings with defined agendas and set presentations. Instead, Imagineers gather for informal conversations when they have ideas to discuss. These may include poster sessions, museum tours, park visits, and visits to other venues where they can engage with people from other teams and sometimes guests. This approach promotes both inclusion within the group (because anyone can offer a thought or ask a question) and knowledge sharing across groups.[6]

As a result, the company cultivates a diverse array of problem solvers and generates more innovative outcomes. As an Imagineer noted, team members need "social spaces and conversations where everyone feels able to contribute. Traditional meetings, conference rooms, and presentation technologies are actually designed for the opposite!"

As a result of its process, Disney recently launched an improved version of its disability access services card, which provides shorter wait times for attractions to guests who have physical challenges. The innovation was prompted in part by observations of guests as well as feedback gathered at different points, including direct conversations with people who love Disney but have been unable to enjoy its parks as fully as other guests.

Similarly, Mayo Clinic redesigned communication between health care providers and patients in underserved communities — and improved service delivery — by sending the providers to churches and to patients' homes. They used social media and text messages to coordinate visits and inform patients of test results. In these ways, the providers established relationships with patients in places where the patients felt comfortable, using platforms that were familiar to them.

Disney Imagineering and Mayo Clinic prioritized participation by underrepresented stakeholders. From these examples, we can see how doing so leads companies to rethink the physical environment, organizational structures, and venues for holding conversations and sharing knowledge that shape how we work and what we believe about the world around us.

To get started on expanding participation, leaders can ask some key questions: How easy is it for all stakeholders to meaningfully participate? Who contributes to new initiatives? Are there multiple avenues for participation?

APPLICATION

When we apply DEI, we're redesigning entrenched systems or processes that have favored some types of people over others — whether because of their race, gender, social skills, self-expression, or other characteristics, and whether consciously or not. These systems include how organizations develop and promote employees, define job titles, and even create and sell products. Changing them is difficult because it's hard for organizations to change how they do anything. Leaders themselves may fail to understand how their organization's processes may exclude people. And, to be frank, some members of the organization may resist changing existing processes from which they benefit.

As a result, application is the most difficult value

Prioritizing participation by underrepresented stakeholders leads companies to rethink the physical environment, organizational structures, and venues for holding conversations and sharing knowledge.

Successful application should also be evident in a company's products and services. By adopting inclusive design, it learns to see that no customer is average and learns how to serve all customers better.

to achieve. But when we do achieve it, we get organizations that are more human-centered. Titles reflect what a person does rather than their status in the hierarchy. Employee identity becomes associated with their talent rather than how many people they oversee or how much budget they control. Performance is measured by what individuals accomplish rather than appearances or other criteria that have nothing to do with the results they achieve.

Successful application should also be evident in an organization's products and services. Products designed for the average customer won't meet the needs of many. Organizations that adopt inclusive design learn to see that no customer is average, and learn to serve their customers better.[7]

We studied Google, which has pioneered a design approach that focuses on the individual and incorporates empathy and compassion for people and thus creates inclusion.[8] One of Google's great challenges has been building machine learning systems that can adapt to differences in learning, language, and the structure of knowledge across cultures. For example, machine learning models for classifying clothing in images can be trained to understand different skin tones, body types, and styles of dress anywhere in the world. This, Google says, helps shoppers "feel like they're seeing themselves when they look for clothing."[9]

To begin the conversation about applying DEI, leaders can ask specific questions: How are we using new perspectives to reframe our business problems? How adaptable are our structures and processes? What unchecked assumptions do we make about our organization and our marketplace?

APPRECIATION

An important bridge between representation, participation, and application is *appreciation*: recognizing the value DEI brings, being grateful for it, and relying on it to make your organization successful. Glitzy marketing, positive PR, and enthusiastic leaders can demonstrate appreciation for DEI; yet, without action to manifest the other values, publicly embracing it is hypocritical. However, when combined with the other values and exhibited sincerely, appreciation has powerful synergistic effects: It maintains momentum, demonstrates impact and progress, reinforces the place of DEI in the core mission, and signals the actions that are prized and those that are discouraged. The result, according to our research, is that employee turnover declines, especially among people from underrepresented groups.

Creating appreciation for DEI begins with how leaders communicate about it, especially when they recognize teams and individuals for their accomplishments. When people are celebrated, it should be for what they contributed and the qualities that make them successful at their work — such as their skill at problem-solving or their way of dealing with difficult customers — without calling attention to their background or their sociocultural characteristics.

Often, it's hard to even tell how employees are selected for awards, promotions, or raises, because the processes for choosing whom to reward aren't transparent. Employees don't know whether they or people like them have been considered, especially when the "winners" tend to come from the dominant group. Meanwhile, if employees are rewarded for only a narrow set of achievements, or they are rewarded even though they make insensitive jokes or comments to their colleagues, employees who are from a group that is unrecognized become demoralized. They contribute less and are more likely to leave the company, because they conclude that they will not be able to succeed.

For many people, being recognized by their team or department — that is, knowing that their colleagues see and appreciate their contributions —

matters more than getting a corporate award. Our research suggests strongly that people feel more loyalty to their work group than to the organization, which in turn indicates that traditional recognition systems need updating. Rather than celebrating individuals, organizationwide awards can be redesigned to reflect connectedness among people and their work groups, thus highlighting inclusion. When employees witness a wide range of contributions and perspectives being recognized, they have hope that what they offer will also be appreciated.

The key to showing appreciation for DEI is to thoughtfully question how we talk about the work people do and how we recognize them for it.[10] Some questions to ask: What do we reward? What do we discourage? What is the logic behind our reward system?

The Means to Get There: Seven Guiding Principles

With our destination established, we can now map out the route. It is clear from our research that the journey to DEI is not driven by a strategy; strategy is too linear and too rigid. Rather, transforming your organization requires prioritizing the following practices. (See "Seven Guiding Principles for Achieving Diversity, Equity, and Inclusion.")

Build a moral case. Countless articles and seminars promote DEI as a "great business case."[11] And it *is* good for business results. However, DEI should not be primarily driven by profit: That will take it only so far. There is a moral case for DEI that is centered on meeting people's and society's needs and making an *honorable profit* by ending exploitation of people and the environment (because doing either of those things is not inclusive by definition). Making the moral case — saying DEI is right and wearing it on your sleeve — signals that the work of achieving transformational change is rooted in values that are deeply held in the organization and not subject to changes in business conditions.

Encourage willful interrogation. Organizations must encourage frank discussions about race, gender, age, accessibility, privilege, and anything else that might hinder DEI. We call this principle *willful interrogation*. Many leaders would rather avoid such conversations for fear of saying the wrong thing, but without them, nothing will change.

The key to willful interrogation is to hold conversations in small groups where leaders listen and ask questions rather than talk. Leaders must not only be prepared to learn about employees' unpleasant experiences but also to not have immediate answers for the issues that surface. Real transformation takes courage, patience, perseverance, and the right starting line. Willful interrogation is that starting line.

Develop new mental models. A mental model — what we might refer to as a person's worldview — is the rationale for how something works in the real world. Organizations have mental models that provide the reasons behind organizational structures, processes, rules, and systems. They require attention because they can perpetuate racism, exclusion, and inequity, even if the people working within those flawed structures are believers in DEI. The mental models of an organization must be revised to reflect the values of DEI.

For example, we have mental models around who makes a good leader that incorporate assumptions about what leaders look and act like. If, when choosing a CEO, people imagine a tall, White, male extrovert, they will struggle to see an introverted Black woman in the role. With a mental model that is focused on the skills and competencies that a CEO needs in order to execute the business strategy, the company can create a selection process and decision criteria that are more likely to include candidates with a variety of backgrounds and experiences. They may also decide to rethink another mental model — how and where to find executive talent — in order to identify people from underrepresented groups who are interested in being recruited but are not part of a company's traditional networks.

The fact is, no one can promise to change the feelings of people who hate. But we can change the flawed and outdated mental models that define how we work and interact with one another. People will learn to operate within them whether they change their personal views or not, although many will change when they see how much more successful it makes them.

Adopt entrepreneurial leadership. Like any important initiative, DEI requires support from senior leaders, but everyone has to engage with it.[12] Managers and front-line employees alike will need

to become engaged in problem-solving — to become entrepreneurial in their efforts to achieve the four values.[13]

To empower them, organizations need to bring more visibility to the diversity within. One way to do so is to rotate managers through departments and cross-train them so that they are exposed to different aspects of the organization and to diverse people. These experiences help advance DEI in several ways. Most obviously, perhaps, managers develop empathy for people with different skills, backgrounds, and experiences as they encounter them across the organization. They can also uncover pockets of untapped expertise and gain an understanding of the challenges or obstacles employees may face.

With this knowledge about how different people operate and what they need in order to succeed, managers can take more initiative. They can clear a path for employees whose achievements may not have been visible previously or who need support in order to develop their talents. They can decide, for instance, to fill a role with someone who lacks traditional credentials but has demonstrated the skills and the aptitude for it.

Here is where *equity* enters the picture. Rather than forcing every employee down the same path, entrepreneurial leaders recognize what each person needs to succeed and tailor their management approach to each individual. This is essential to creating equity; think of it as offering left-handed baseball gloves to those who need them rather than forcing everyone to play right-handed and thus preventing some people from doing their best.

Ensure accountability. To be accountable is to understand the causes of inequality and take responsibility for addressing them, both internally and where the organization can have an impact externally.

To detect and correct the root causes of discrimination and disparities, an organization needs data on its workforce that includes race, gender, ethnicity, pay, sick leave, and other relevant variables. Aggregated data about average conditions or outcomes obscures the experiences of different groups of people.[14]

To create accountability, organizations may need to establish new policies and practices for data collection and analysis, as well as a strategy and tools to ensure that the data is analyzed and used. When business leaders have illuminated disparities and located their causes, they can identify measurable and meaningful steps for transformation.

Be ambitious. When a company launches a new product, it may have taken months or years to develop it, along with the sales and marketing strategy and a distribution plan. DEI efforts should be just as ambitious, with the same level of energy and momentum the company puts into growth.

In fact, DEI is an effort to grow the company and make it more innovative. It offers an opportunity to run the organization better and for its people to do better — to learn, to progress, and to keep themselves relevant. Business leaders can leverage DEI

SEVEN GUIDING PRINCIPLES FOR ACHIEVING DIVERSITY, EQUITY, AND INCLUSION

The principles provide a map for achieving the values in a way that is inclusive and transformative.

BUILD A MORAL CASE
Business cases have legitimized exploitative actions throughout history. Choose to build DEI because it is the right thing to do. Embed DEI into the collective mission.

ENCOURAGE WILLFUL INTERROGATION
Ask, "Why? What is possible?" Make it a priority to openly discuss race, representation, diversity, and inclusion. Amplify employee voices to create awareness and change. Identify the specific needs of the organization; one size does not fit all.

DEVELOP NEW MENTAL MODELS
Use cross-training and job rotation to improve access to a wider variety of people. View markets and customers as multicultural and dynamic. Engineer systems to overcome inequities that result from bias.

ADOPT ENTREPRENEURIAL LEADERSHIP
Engage managers in solving the problem. Ease up on control tactics. Promote community ownership of the workplace. Encourage self-managed teams, mentorship, and sponsorship, as well as safe places to grow and develop.

ENSURE ACCOUNTABILITY
Implement organizational mechanisms and incentives (such as task forces, steering committees, mediation, goals, and expected results) to promote, oversee, and guide social accountability.

BE AMBITIOUS
Treat DEI with the same zeal and energy as new-product development. Expand DEI efforts from the organization to the broader community. Don't underestimate the challenge or the need to fine-tune efforts as time goes by.

EXPAND THE BOUNDARY
Look beyond the organization for knowledge, know-how, and best practices. Share experiences/insights with other leaders, and contribute and draw knowledge from professional associations, working groups, and other outside sources.

to increase revenue, create better opportunities for people, and positively impact the communities where they operate. These are big goals that require both vision and drive. When leaders aim high, think big, expand their viewpoints, ask meaningful questions, and expect action, DEI will become a prized resource rather than a burden to carry.

Expand the boundary. Leaders often feel that their DEI work should be kept "in the family," so that outsiders don't see how the organization might be struggling. But like all great innovations, the best DEI initiatives leverage ideas and practices from outside corporate boundaries.

For example, CEO Action for Diversity and Inclusion, a coalition of nearly 2,000 CEOs, provides a platform through which member companies contribute information and advice about their practices for advancing DEI. Participants are encouraged not only to share their successes but also to be open about efforts that have not worked and the challenges they are facing.

It may take courage to explore, borrow from, and adapt what others have learned and invented, because it means you have to admit that you haven't had all the right answers. But achieving DEI is complex and ongoing. You are more likely to succeed if you accept that you can't succeed in isolation.

IT'S TEMPTING FOR business leaders to see DEI as a set of discrete programs to execute rather than an encompassing effort to transform the organization. But as our research suggests, achieving DEI isn't a linear process with a set of tasks to be checked off, but rather a commitment to cultivating core values and turning guiding principles into organizational habits.

A good starting point for working with the VPM is to consider where an organization's values and practices match — or fall short of — what the model espouses. How have the practices and actions of the organization contributed to — or created barriers to — DEI? Then use the guiding principles to set a path for reconciling the practices of the organization with the VPM values. Every organization is different, so each path will be unique.

While top leadership commitment to the VPM is essential, it encourages initiatives that can be designed and owned by people anywhere in an organization. When everyone can participate in DEI, they learn to trust it as a transformative force. DEI becomes the foundation for fresh ideas and new possibilities — the hallmark of change that is innovative, transformational, and inclusive.

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Why We Don't Talk About Meaning at Work

Meaningful work will remain elusive if managers don't learn to overcome four barriers to healthy conversations about what gives individuals their sense of purpose.

BY MARJOLEIN LIPS-WIERSMA, CATHERINE BAILEY, ADRIAN MADDEN, AND LANI MORRIS

Before the COVID-19 pandemic, meaningful work was already high on the management agenda. Employees were exhorted to find their "calling"; leaders, their "why"; organizations, their "true north." There were good reasons for this: Studies have shown that high levels of meaning and purpose lead to improved engagement, productivity, and innovation.[1]

But the pandemic has raised the stakes even higher. It has caused many of us to pause and reevaluate the role work plays in our lives and what truly matters to us. Employers who can't offer meaningful work risk demotivating or losing valued employees — the very people needed to drive organizational growth and renewal.

Faced with this challenge, managers may be tempted to amplify internal messaging around corporate purpose. While purpose beyond profit is vital for a host of environmental, social, and financial reasons, relying on this approach alone to raise levels of individual meaning can backfire.[2] The more employers try to *tell* employees where to find the meaning in their work, the less likely people are to actually find it. An authentic sense of purpose is not simply imposed; it is discovered.

In other words, meaning-making should be a grassroots process. But first, managers and employees must learn how to talk with one another about it. Engaging in dialogue is integral to discovering meaning. Talking with a trusted conversational partner helps us shape how we understand ourselves, interpret the world, and relate to others. And as we listen to others speak about meaning, and they listen to us, we help one another discover it.

We have found in our research and consulting work over the years that four barriers make such conversations difficult.[3] Let's look at each of these barriers — and how to overcome them.

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Talking About Meaning Can Be Unsettling

When we ask people what meaningful work means to them, we often hear nervous laughter and comments like "That's a funny question to ask" or "I don't know." Concerned that they don't have a ready answer, they often need to be coaxed into discussion. Existential contemplations like "Why am I here?" and "What is the significance of this?" can feel quite intangible.[4] In the workplace, where it is important to appear competent and in control, not knowing feels threatening to our identity.[5]

Talking about meaning at work can also be disorienting. As a school principal in New Zealand said to us, "You're tapping into something a lot bigger than [what] we usually talk about at work, which is good and important but also feels a bit more boundless than comfortable."

Having been silent on the topic for so long, many people lack the language to articulate their deeper feelings about how work can contribute to a sense of meaning. As a result, they may miss opportunities to deepen their engagement and satisfaction with work. In developmental reviews or career conversations, employees typically do not speak up about meaning and may end up with the same unsatisfied need for it even if they are able to re-craft their job or take on another role. They may also feel isolated: In our research, we found that employees are often surprised that colleagues are on the same quest.[6] Until conversations about meaningful work become more frequent and natural, employers will struggle to identify and meet individuals' deeper needs.

TRY TO: Let Employees Talk About Meaning in Their Own Words

Just as meaning is deeply felt, so are the words associated with it, whether positive or negative. For example, one person might say, "I don't like the notion of *service* — that's what my pastor always talked about, and as a child I dreaded going to church with my parents. I prefer to think about impact." Yet someone else might have an aversion to the word *impact* because their last workplace used it all the time but failed to measure outcomes; it amounted to empty, insincere rhetoric.

The words *themselves* are not wrong. But given individuals' strong associations with them, it is best to enable people to choose their own language to describe what is meaningful to them. This will also help to ground them and make the conversations feel less disorienting. Sometimes, in our workshops, it takes people a while to come up with the right words, or they borrow language from one another. However they go about it, it is important that people find words that resonate for them rather than simply adopting corporate language. For example, employees may choose to talk about "quality relationships" rather than "internal networks" or even "collaboration" to assess whether their teamwork is meaningful.

People Have a Limited Definition of Meaning

In our research, we have identified four key, equally valuable sources of meaning in work: service to others, realization of full potential, unity with others, and self-integrity (which includes authentic behavior, self-discovery, and character development).[7] However, in interviews we have noticed that people typically emphasize just one or two of these sources. Some say that work is only meaningful if it serves others, whereas others primarily focus on personal accomplishment. Because "making a difference" and "achieving excellence" often dovetail nicely with corporate priorities and language, those aims are reinforced at the organizational level, while feeling a sense of unity with colleagues and acting with personal integrity are riskier to discuss in an impersonal workplace. Individuals decide what information they will share about themselves, how much, and with whom in light of what they presume to gain or lose from such disclosures. When sources of meaning challenge or do not directly match corporate language, employees may avoid self-disclosure for fear of being judged as naive or not fitting in. This can lead to marginalization.[8]

When individuals leave things unsaid, discussions about meaning remain incomplete throughout the organization. For example, when leaders don't explicitly talk about the need for belonging and feeling supported in a team, employees may interpret that as a signal that unity is not a legitimate source of meaning. They, in turn, are likely to keep silent about their desire for it. Similarly, employees often don't reveal how organizational decisions support, or don't support, their drive to engage in

self-discovery, behave authentically, and even become better people.

If only one or two sources of meaning are well understood and articulated, one risk is that individuals will not feel "whole," and their engagement and performance will suffer. Another risk is that considerations of unity and self-integrity (and other unspoken sources) will be omitted from critical decisions on highly relevant topics — say, organizational change. With some needs for meaning met and others ignored, employees may experience heightened stress or other problems associated with well-being and leave their organizations out of exhaustion or frustration. Nurses and teachers make a difference to others but are still quitting their jobs in record numbers.[9] While they have no lack of opportunity to serve, they often miss other sources of meaning, such as unity, expressing their talents, or self-integrity.

TRY TO: Define Meaning More Broadly

To expand everyone's understanding of meaning, speak explicitly to a range of potential sources — not just serving others and realizing one's full potential (the usual suspects), but also feeling unity with others and upholding self-integrity. This can be done periodically through simple in-house workshops led by a staff member or an outside facilitator. In workshops we run with teams and organizations, we use visuals on flip charts around the room to illustrate the four sources of meaningful work. People move from easel to easel answering questions like "How does my job enable me to feel connected with others?" and "When was the last time that doing my job well mattered to someone else?" At the end of the session, the flip charts are brought together, and the facilitator can then highlight gaps and strengths for discussion.

In one PR agency we worked with, this exercise revealed that people felt a strong sense of achievement but lacked opportunities to share their successes with clients and colleagues. Thus, they fared well on realized potential but not on unity. After having the conversation about meaning at work, the agency introduced brown-bag lunch sessions specifically aimed at sharing ideas, celebrating achievements, and building community. That may sound like a token effort, but it cut to the heart of the problem. People overwhelmingly felt isolated in their respective silos and were craving connection. They told us they relished the opportunity to get to know their colleagues better in an informal setting.

In organizations we've studied, we've observed that sources of meaning can be made more visible in other ways as well. For example, at an offsite event or during a team-building session, leaders and employees can share stories about meaning they've found in unexpected ways. Or at meetings where big decisions are made, those agenda items can be checked against the four potential sources of meaning. Meaning can also be cocreated during developmental reviews through a series of questions that prompt employees to reflect not just on their personal growth but also on what opportunities they had in the previous quarter to see the impact their work has had on others, how their role has enabled them to be true to what matters most to them, and what management can do to remove obstacles to meaningful work.

Complaints Aren't Recognized as Quests for Meaning

Meaningful work generates feelings of contentment and purposefulness, which are often conveyed through positive comments and contributions — expressions of appreciation, for instance, or solution-oriented statements. So the presence of meaning isn't usually difficult to recognize. However, its *absence* can be, for both leaders and employees, especially when a sense of meaning has gradually eroded (as often happens through mismanaged organizational change programs, or poor leadership). Feelings of discontent, emptiness, and sadness — stemming from a lack of meaning, but not necessarily understood as such — often lurk behind complaints about management. For example, when moved from one department to another, employees may say, "They don't bother to understand how we work here," but they might not identify or express important information, such as their sadness about losing close working relationships and the grounding they got from those connections.

Even if employees grasp and try to articulate the feelings behind their complaints, leaders may fail to see the underlying quests for meaning. Many leaders also have little patience with negativity and demand that people bring them solutions rather than problems.[10]

Because people are not trained to listen for, or collectively find, words that convey the absence or loss of meaning, leaders and employees alike miss out on important information. It can be easy to interpret a complaint about ideas and suggestions being ignored as, "The boss doesn't respect or agree with us." But if all parties listen for frustrated meaning, they may learn that the group feels they can't perform to their full potential because they can't use their creative ideas to improve the situation.

When quests for meaning are expressed and heard as complaints, the collective mood takes a negative turn via emotional contagion. This fuels dissatisfaction at the team level and ultimately harms organizational performance in areas such as productivity, problem-solving, and innovation.[11] If the quests for meaning remain unaddressed, the complaining can spiral, leading to more (and more defeatist) complaints expressed in killer phrases, such as "We tried this before, and it will never work."

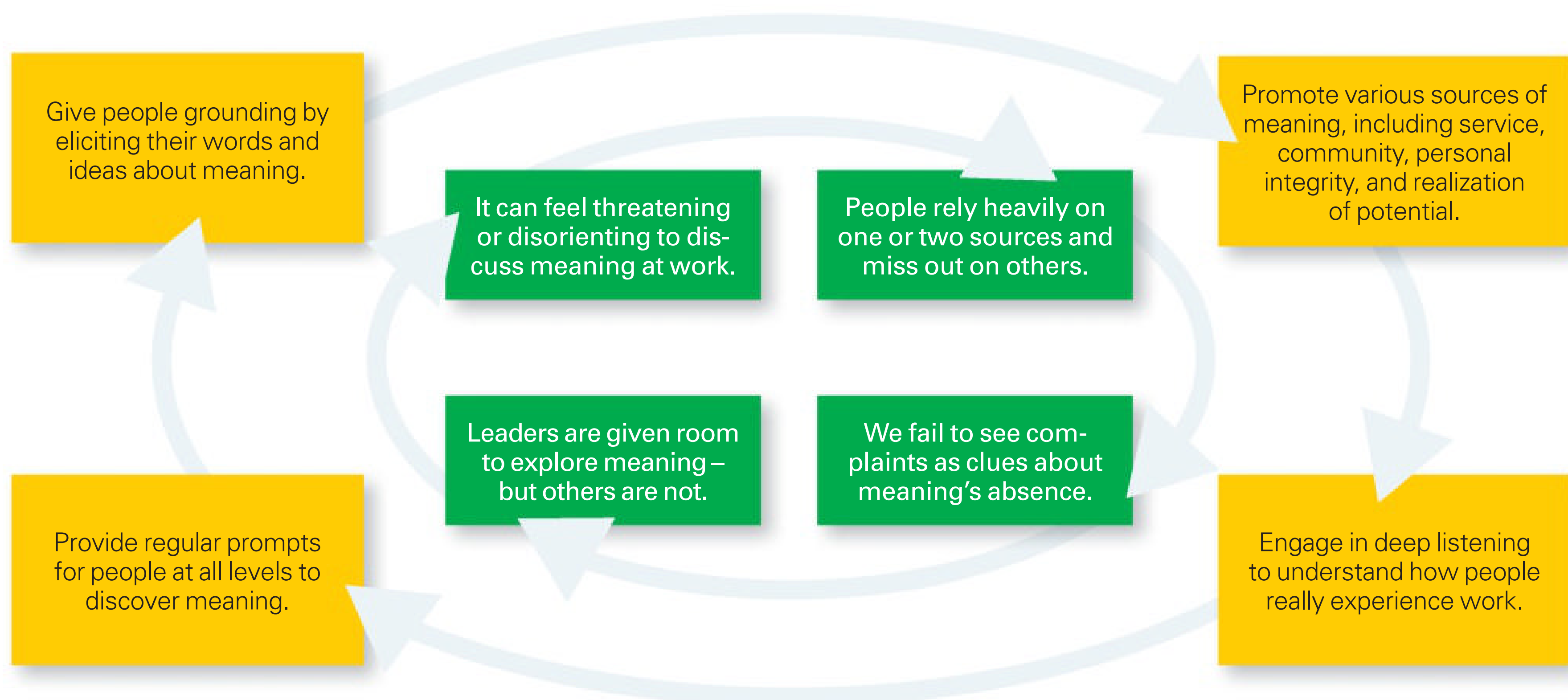
TRY TO: Listen Deeply to Understand How Things *Really* Are

While listening for meaning requires that people spend time together, leaders especially need to be *present* when they spend time with employees and colleagues, and vice versa. This is a joint responsibility. Being present means that you listen for expressions of how work is actually experienced rather than how you wish it was or think it should be. Sometimes this gets uncomfortable. While you might be tempted to quickly change the mood by balancing negative comments with a positive statement or identifying solutions to problems, sit with the discomfort first. Be curious: Probe for how and why things aren't working for people, and listen for actual or potential losses of meaning. If employees complain about a new program or product, they might really be worried that it won't align with their personal values. Phrases like "I'm not sure I see the benefit" and "People won't buy into it" can provide clues about deeper concerns.

Listening for meaning requires very different skills from chairing a meeting about budget or strategy; it's not about finding solutions but instead about allowing people to be seen and heard. Managers can convey active listening through body language — nodding their head, making eye contact, leaning forward. They can also summarize what they hear to check for understanding. And they can defer judgment about the employee's comments and complaints to show that they are fully focused on the conversation and ensure that they hear expressions of meaning or its absence, however these are presented.

WAYS TO BREAK THE SILENCE

Moving beyond four key barriers to talking about — and cocreating — meaningful work in your organization can improve employee engagement, productivity, and innovation.



Once people feel seen and heard, they feel better equipped to translate a complaint into a request for more meaning. It won't seem futile. For example, if they don't think they are given room to use their creativity, they may say something like "My creative solution from last week was ignored, but I am not quite ready to let it go. Can I take a little time to work it out and come back to you?" As people start to stand stronger in their own quests for meaning (rather than just becoming despondent and giving up) and leaders continue to actively listen for meaning, new insights and practices will emerge, creating more opportunities for meaningful work.

Meaningful Work Is Treated as the Preserve of Leaders

Due to the explosion of interest in purpose-driven leadership, organizations now regularly allocate time and resources so that members of the C-suite and other senior leaders can participate in workshops where they can talk about their personal purpose and learn how to impart organizational purpose to their teams.[12] However, most employees aren't given opportunities to find and articulate what is meaningful to them. Paradoxically, at a time when leadership is increasingly seen as shared, relational, and conversational, meaning is usually defined and bestowed by those at the top.

This approach isn't working. Research shows that people rarely mention their leaders when talking about meaningful work. When they do, it is often to describe obstacles that leaders put in the way — destroying a sense of achievement and connection by switching people off project teams before the work is finalized, or thwarting their ownership of problems and tasks by continually overriding their judgment.[13] Because meaning is often treated as the preserve of leaders, it can be hard for employees to say that they have lost meaning because of leaders' actions or that they have received mixed or confusing messages about sources of meaning.

It's not news that leader-centered, individualistic, and heroic styles of leadership, which focus on how leaders should change their "followers," fail to tap multiple perspectives to make sense of a complex, volatile world. So it should come as no surprise that such styles also fail to confer meaning to individuals and teams and to the work they do.[14] Followers don't want to be told what they should find meaningful. Especially when they have been hurt by bruising organizational practices in the past, they worry that conversations about something so intensely personal could leave them vulnerable. Tuning leaders out when they talk about meaningful work can feel like the most sane and healthy response.

What's more, when leaders try to define meaning for others, they may feel out of their depth, or even fraudulent — after all, when it comes to how to work meaningfully themselves, they know no more about it than anyone else. Those who view leadership as taking charge may persist in imposing meaning rather than exploring it with others as equals. Employees are observant; they notice when their managers are faking it or protecting their own interests. This undermines trust, further shutting down opportunities to build honest relationships and cocreate meaning.[15] Moreover, in cases where leaders aren't willing to share power in general, they are likely to meet with resistance when trying to impose meaning, and "purpose work" will become just another set of mechanical exercises eliciting cynicism from employees.

TRY TO: Have Everyone Participate as Equals

Effective conversations about meaning require a significant shift in mindset. They should be meetings of equals and should emerge from solid relationships between leaders and employees rather than from what the leader "knows." In the words of the CEO of a tax software company with very high employee ratings on Glassdoor: "Thinking that you can infuse employees with meaningful work is an illusion. It requires getting closer to employees, listening for their meaning, and treating it with the sensitivity it deserves."

To surface meaning, it is particularly important to focus on the process in addition to the outcome. Process is what empowers others to express their ideas and needs, holds us all accountable for inclusive and ethical behavior, and provides a structure for discovering purpose. Leaders should ask themselves: Do employees and leaders talk openly about meaning and purpose and listen to each other? At what points in decision-making, planning, and execution does meaning sometimes get overlooked,

and who is responsible for making sure that doesn't happen at each stage? For example, when deciding to launch yet another change initiative, do leaders think about how it is likely to affect employees' sense of purpose? Who considers this in the design phase of the change process? As employees execute the initiative, are they asked how it affects the meaning of their work? And are they speaking up? Becoming attuned to these process issues so that everyone has a voice helps build trust all around.

When process prompts leaders and employees to continually question and improve their conversations about meaning, their relationships become less hierarchical. While embracing this approach to leadership may require upskilling through coaching, workshops, courses, and other tools, fundamentally it is about seeing the other person as a fellow human being and regularly asking oneself, "What is it like to work with me?" If employers want to take meaningful work seriously, anyone in a position of power must have the courage and desire to experience conversations about meaning on equal footing.

PEOPLE ARE WILLING to leave their employers in search of meaningful work, but organizations can help them find it where they are by clearing the conversational barriers that we have described.

Talk of meaning tends to get crowded out by talk of efficiency and effectiveness. By ignoring or sidestepping conversations about meaningful work, employers unwittingly lose opportunities to motivate people, strengthen their connections with one another, and improve performance. Organizations serve everyone, including themselves, much better when they create safe spaces for conversations about meaning and include people at all levels in the quest.

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Fostering Ethical Conduct Through Psychological Safety

Line managers are key to creating safe spaces for employees to discuss concerns.

BY ANTOINE FERRÈRE, CHRIS RIDER, BAIBA RENERTE, AND AMY C. EDMONDSON

How do organizations encourage people to speak up about ethical breaches, whether inadvertent or deliberate? Why do some employees choose to remain silent when others report misconduct? In a world of increased scrutiny for corporations of all types, it is more essential than ever that when misconduct happens or difficult problems arise, there is a strong ethical climate for surfacing information so that leaders can respond quickly and appropriately. An environment in which employees feel comfortable reporting such issues is also vital to preventing future misconduct.

As part of an unprecedented global study on workplace ethics, we analyzed the perceptions of those who report misconduct against those of "silent bystanders." This helped us better understand both the drivers and derailers of speaking up — and revealed insights into how leaders and compliance officers can encourage employees to make such reports.

Although our work has an obvious relationship to whistleblowing, in the context of psychological safety and ethics, we make an important distinction between external whistleblowing and those who speak up about perceived misconduct at work. By reporting illegal or unethical activity to external authorities, whistleblowers play a vital role. Moreover, it is likely that they felt their concerns could not be expressed, heard, and addressed internally. We posit that a healthy organizational culture is one in which speaking up and listening go hand in hand and thereby reinforce ethical standards. If concerns are

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THE RESEARCH

The authors' comprehensive workplace survey measured key psychological constructs and behaviors related to ethics, including employee perceptions of fairness and trust, organizational justice, loyalty, conflicting goals and pressure, clarity of expectations, sense of control, and psychological safety.

All Novartis employees were invited to take the 2021 global survey. It was available in 15 languages and received more than 38,000 complete responses from employees in over 100 countries.

expressed, changes can be made in a timely way.

Thankfully, there are a number of things organizations can do to make it more likely that people will speak up when they observe unethical behaviors. Our research discovered that psychological safety in this context is essential. Psychological safety, a phenomenon studied extensively by coauthor Amy C. Edmondson, is defined as "a shared belief held by members of a team that the team is safe for interpersonal risk-taking" — or, put another way, that "we can say what we think" or "be ourselves around here."[1] Today, a number of global organizations recognize the importance of this concept.[2] While previous corporate studies, like Project Aristotle at Google and the Art of Teamwork at Microsoft, demonstrate the importance of psychological safety for team effectiveness, team performance, and creativity, little research has investigated the role of psychological safety in workplace ethics.[3]

At the beginning of 2021, with the support of the Novartis CEO and its chief ethics, risk, and compliance officer, the company launched an initiative to study psychological safety and ethical behavior. Drawing from published social science research, the ethics, risk, and compliance team created a survey to measure psychological constructs and behaviors related to ethics. (See "The Research.") The survey was completed by more than 38,000 employees in over 100 countries who held positions at various levels in the organizational hierarchy. This provided a unique opportunity to study psychological safety in a diverse sample on a global scale in relation to other psychological and behavioral constructs associated with workplace ethics. The results of our research demonstrate that psychological safety forms an integral part of the ethical climate of an organization.

The Role of Psychological Safety

While many people said that they spoke up after witnessing perceived unethical behavior, a substantial minority said that they did not speak up. Among the survey respondents who perceived unethical behavior last year, some reported it to a "speak-up hotline," a human resources officer, or their line manager, while others admitted that they felt comfortable sharing it only with their friends or family or kept it to themselves.

Among employees who had observed unethical behaviors during the prior year, we found that those who felt less psychologically safe were significantly less likely to report those behaviors via channels where organizational leaders might act on them. (See "Reporting Channels and Psychological Safety.") Those who felt the most psychologically safe were most likely to have reported the misconduct they observed. This held true even after taking into account a range of other psychological factors that could influence incident reporting, such as perceived levels of organizational justice, fairness, and trust. Psychological safety is therefore important for more than just team effectiveness and well-being; it may also be critical for forming strong ethical cultures where employees feel comfortable speaking up.

Because psychologically safe workplaces provide such a range of benefits, the ethics, risk, and compliance function and HR share an interest in fostering such an environment. Our results should motivate cross-functional collaboration as an essential element of shaping an organization's culture. Managers throughout a company must become aware of the blind spots created by a psychologically unsafe environment, along with the associated risk of underreported misconduct. In particular, a formal program (or reporting hotline) may capture only a fraction of the problematic behaviors that occur. Measuring psychological safety may help companies determine whether misconduct is being reported and, in turn, enhance the effectiveness of their formal speak-up programs.

It's Not Just Tone From the Top

What most organizations tend to get right these days is how senior leadership talks about ethics. CEOs emphasize that integrity is a core value of their organizations, and that point is reiterated in calls with shareholders and during employee town hall meetings. While this messaging is important, it is not sufficient to prevent the derailers of ethical conduct that occur deep within an organization.

We found that line managers — not just official speak-up channels — are often on the front lines when it comes to hearing about unethical behavior. Indeed, of employees who chose to report an incident, 80% went to their line managers. This indicates that these visible leaders play a critical role in ensuring

that the person speaking up feels supported and heard. Our data shows that how line managers act has a disproportionate impact on the way potentially unethical behavior is addressed within organizations.

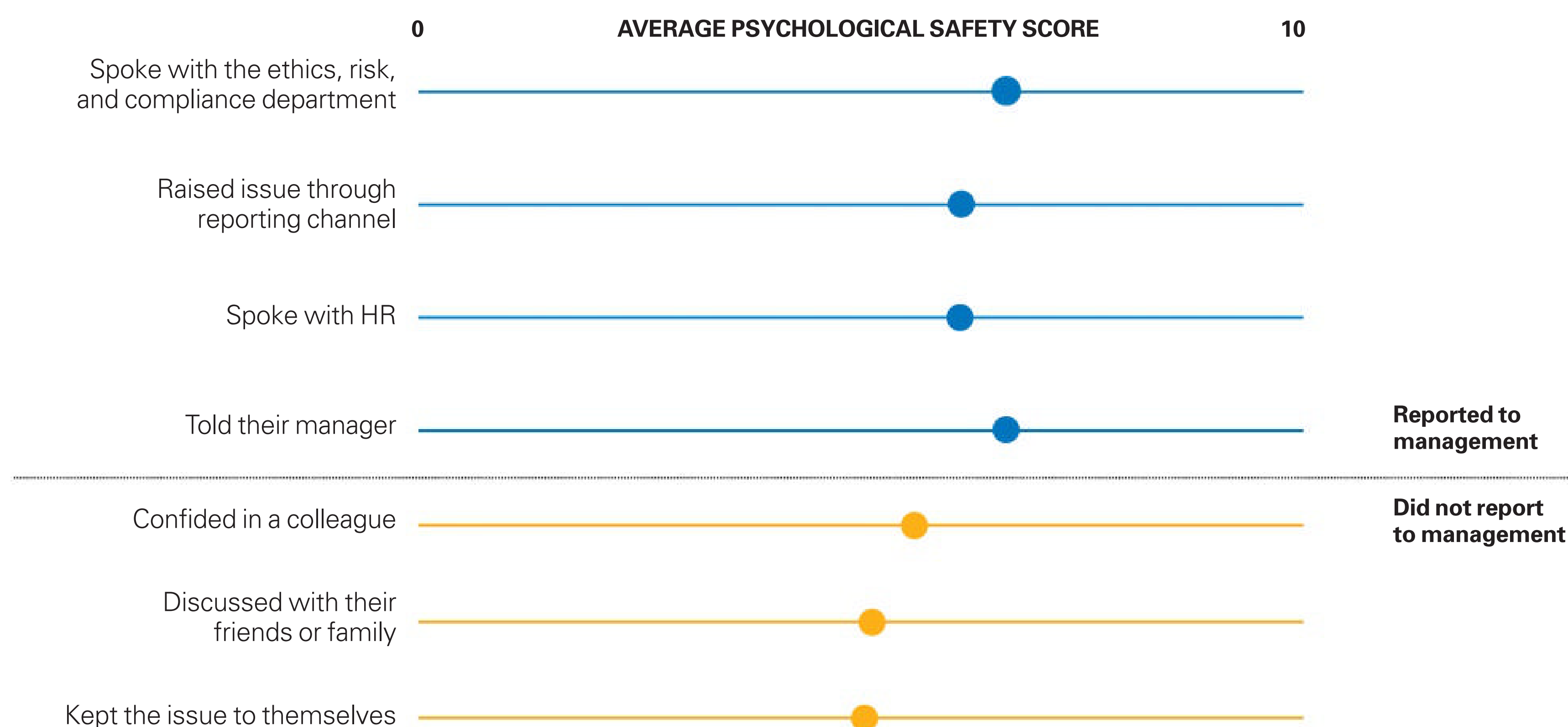
Line managers who feel psychologically safe should not assume that their teams feel the same way. In fact, we found that managers and senior leaders tend to feel more psychologically safe than their employees and have a more positive perception of their organization's ethical climate than the rest of the workforce. Those two findings together confirm that people higher up in the organization might have an ethical blind spot.[4] That makes the role of team managers even more important when it comes to fostering an environment conducive to both engaging in ethical behavior and talking about ethics in an open, constructive way.

Finally, our research revealed that, in a global context, psychological safety is not uniform across nations. For example, in our survey, respondents from the Americas and Europe tended to score higher on psychological safety than respondents from Asia, all else being equal. Keep in mind that these differences in *average* scores encompass considerable variation within regions themselves. That is, no single region was uniformly high or uniformly low; rather, scores varied across teams. Nonetheless, these differences matter and offer a glimpse of a possible solution. They suggest the potential effectiveness of tailoring interventions that promote speaking up in order to address the specific circumstances of different groups of employees. For instance, global organizations that seek to build psychological safety must assess its various region-specific drivers and derailers to adjust their activities to specific seniorities and cultures.

The Double Jeopardy of an Unsafe Culture

Our research also revealed that when psychological safety is lacking, it may be a consequence of the employee having witnessed unethical behavior. We found that psychological safety was inversely correlated to the quantity of unethical behavior noticed. Put simply, the more unethical behavior a person saw, the more likely they were to feel psychologically unsafe. This suggests that the experience of seeing more unethical behavior may diminish the psychological safety experienced by an employee. (See "Observed Unethical Behaviors and Psychological Safety," p. 42.)

We considered what both relationships — between psychological safety and the amount of unethical



OBSERVED UNETHICAL BEHAVIORS AND PSYCHOLOGICAL SAFETY

Individuals whose psychological safety scores were in lower ranges had also observed more unethical behaviors.

behavior observed, and between psychological safety and likelihood of reporting misconduct — imply about causality. Although correlation is not evidence of causation, it is unlikely that low psychological safety causes people to notice unethical behavior, whereas it makes intuitive sense that being in a work environment where unethical behavior is prevalent might diminish psychological safety.

We propose that the problem we uncovered — that people are most reluctant to speak up in ethically troubled environments, where we most need them to do so — has important implications for company leaders. To break out of this dilemma, leaders must find ways to make it easier for employees to speak up, especially in parts of the organization where the culture may suffer most from ethical lapses.

Our data suggests some starting points. We found that in addition to psychological safety, several other factors correlated with strong speak-up behavior, keeping everything else constant: moral engagement, moral attentiveness, and organizational justice combined with clarity of expectations.

Each of these factors points to opportunities for management intervention:

Moral engagement. Foster an environment where ethical conduct matters, so that when employees recognize a potentially unethical situation, they will be motivated to do what's right. For example, Novartis created a decision-making framework called the Decision Explorer to support associates in making ethical decisions. Rooted in the company's code of ethics, the tool helps employees work through a situation to surface ethical considerations.[5]

Moral attentiveness. Train employees to recognize the ethical dimensions of workplace situations. For example, Novartis runs practical ethics training sessions that immerse employees in hypothetical scenarios where they must practice ethical decision-making. Another approach is to have managers highlight examples of ethical and unethical behavior with their teams and encourage dialogue on workplace ethics. Such grassroots employee contributions build trust and commitment by giving employees a role in strengthening the code of behavior by which they are expected to live.

Organizational justice and clarity of expectations. Action, not just messaging, is vital to building a reputation of organizational justice. First, it's essential that leaders ensure that employees have an understanding of organizational standards and are clear about expectations. Second, leaders must act decisively in response to employee reports of misconduct to show that there are consequences for unethical behavior.

To foster greater psychological safety, coach and empower line managers to create safe spaces for discussing ethical concerns, and help them react appropriately when such issues are raised. For example, Novartis offers managers guidance on how to build psychologically safe teams and how to encourage open discussion of ethical questions. Key lessons focus on active listening and running group dialogues.

We also advise encouraging collaboration between HR and the ethics, risk, and compliance function in building a culture of ethics and performance. For example, Novartis has created a cross-functional working group focused on the notion of ethical leadership. Ethical leaders are not only setting an example on how to act ethically; they also listen when team members bring up problems, take action to address ethical concerns, are trusted by associates to make fair decisions, and define success not just by the results but also by how they're obtained.

Our research found that employees' psychological safety is directly related to their willingness to report unethical behaviors, across countries, culture, seniority, and functions. We found this pattern to be universal and robust. An implication of our research is that efforts to build psychologically safe teams should be done in tandem with efforts to create positive ethical environments.

Building a psychologically safe environment to facilitate speaking up about ethical conduct is relevant to both company reputation and long-term business performance. Unethical conduct can remain hidden for a time but is likely to be discovered eventually, causing far more harm than if it were caught and corrected early. Psychological safety thus can help organizations respond and improve quickly instead of allowing misconduct and unethical behavior to fester and further degrade workplace psychological safety, thus triggering a vicious cycle. While many organizations have relied on speak-up channels or ombudspersons as mechanisms for reporting unethical behavior, such opportunities alone are not enough. They need to be complemented by efforts to actively shape and promote an ethical climate in which managers are equipped to support employees' ability to say what they think and react appropriately to what they hear.

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MEASURING PSYCHOLOGICAL SAFETY

How psychologically safe is your organization? Companies can measure variance in psychological safety across teams and regions by surveying employees. This enables them to focus efforts on teams who need the most help and to identify teams whose psychologically safe cultures may offer examples from which other teams can learn.

We modified Amy C. Edmondson's original 1999 psychological safety scale to emphasize a specific focus on speaking up, and we incorporated the idea of thinking before speaking up in the hope of measuring hesitation.[i]

We wanted to capture comfort levels in speaking up, based on the intuition that in a psychologically safe climate, people tend to say something right away, and when they don't feel psychologically safe, they are more likely to keep incidents to themselves.

Our survey asked employees to anonymously rate, on a scale from 0 (completely disagree) to 10 (completely agree), their level of agreement with the following statements:

1. On my team, if you make a mistake, it is often held against you.
2. Members of my team are able to bring up problems and tough issues.
3. People on my team sometimes reject others for having different views.
4. It is safe to take a risk on my team.
5. It is difficult to ask other members of my team for help.
6. I tend to think about how raising a concern will reflect on me before speaking up.

Our psychometric analyses of the survey data found strong internal consistency between the new, sixth item and the other five statements in the global survey. This provides further support that the ease with which people can talk about their concerns is a central aspect of psychological safety. It also validates a new psychological safety scale that any organization can use to inform efforts to build an ethical climate. Overall, we advocate measuring psychological safety while also asking employees about their speaking-up behaviors (especially related to ethical conduct) to assess the effectiveness of an organization's speak-up culture.

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AI on the Front Lines

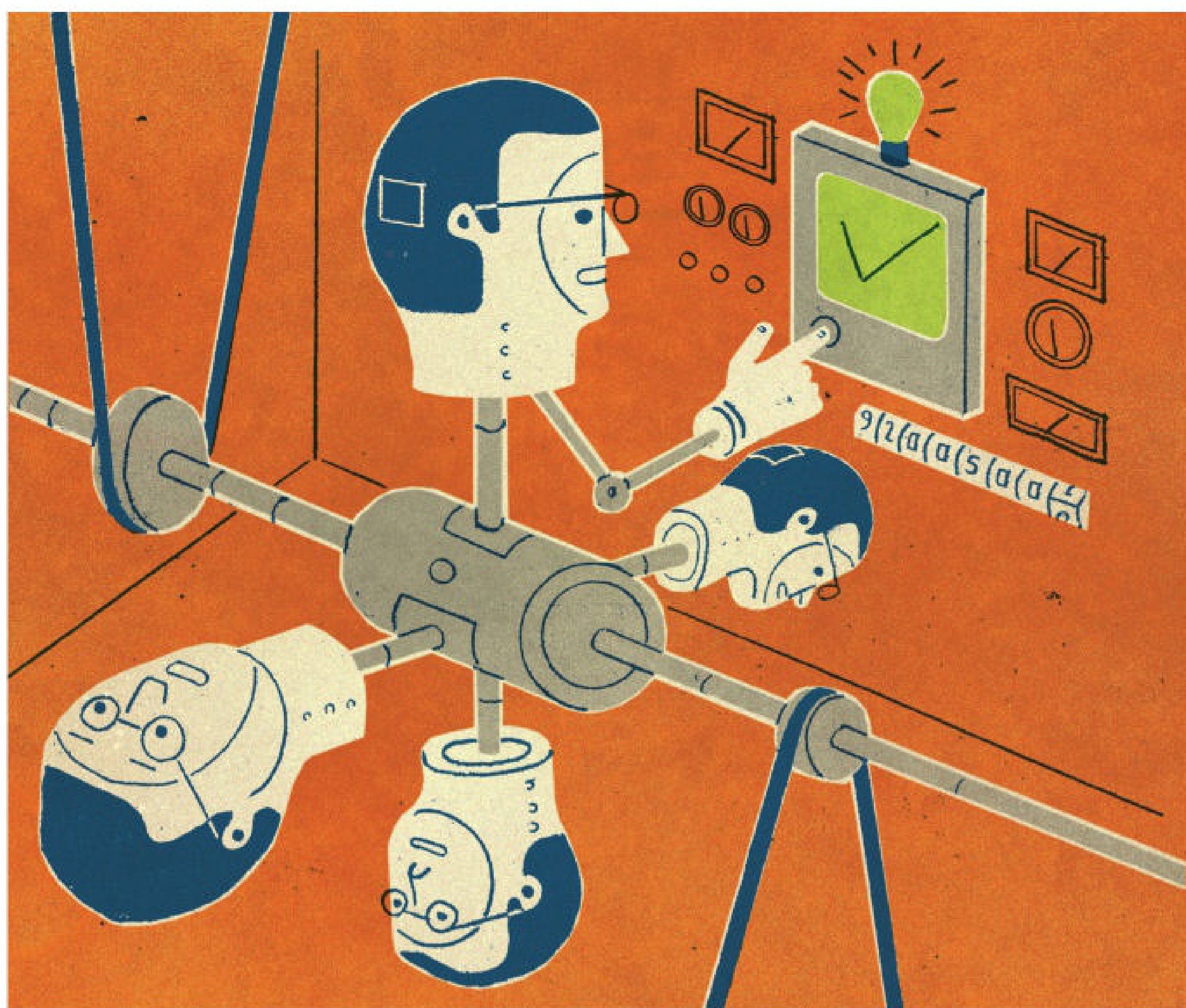
AI progress can stall when end users resist adoption. Developers must think beyond a project's business benefits and ensure that end users' workflow concerns are addressed.

BY KATHERINE C. KELLOGG, MARK SENDAK, AND SURESH BALU

It's 10 a.m. on a Monday, and Aman, one of the developers of a new artificial intelligence tool, is excited about the technology launching that day. Leaders of Duke University Hospital's intensive care unit had asked Aman and his colleagues to develop an AI tool to help prevent overcrowding in their unit. Research had shown that patients coming to the hospital with a particular type of heart attack did not require hospitalization in the ICU, and its leaders hoped that an AI tool would help emergency room clinicians identify these patients and refer them to noncritical care. This would both improve quality of care for patients and reduce unnecessary costs.

Aman and his team of cardiologists, data scientists, computer scientists, and project managers had developed an AI tool that made it easy for clinicians to identify these patients. It also inserted language into the patients' electronic medical records to explain why they did not need to be transferred to the ICU. Finally, after a year of work, the tool was ready for action.

Fast-forward three weeks. The launch of the tool had failed. One ER doctor's comment that "we don't need a tool to tell us how to do our job" is typical of front-line employees' reactions to the introduction of AI decision support tools. Busy clinicians in the fast-paced ER environment objected to the extra work of inputting data into a system outside of their regular workflow — and they resented the intrusion on their domain of expertise by outsiders who they felt had little understanding of ER operations.



Similar failed AI implementations are playing out in other sectors, despite the fact that these new ways of working can help organizations improve product and service quality, reduce costs, and increase revenues. End users often resist adopting AI tools to guide decision-making because they see few benefits for themselves, and the new tools may even require additional work and result in a loss of autonomy.

Such conflicting interests between targeted end users and top managers or stakeholders in other departments around technology implementations are not new. Yet this problem has become more acute in the age of AI tools,

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because they are predictive, prescriptive, and require a laborious back-and-forth development process between developers and end users.

How, then, can AI project leaders increase end user acceptance and use of AI tools? Our close observation of the design, development, and integration of 15 AI decision support tools over the past five years at Duke Health suggests a set of best practices for balancing stakeholder interests. We found that in order to increase end user acceptance and the use of AI decision support tools, organizational and AI project leaders need to increase benefits associated with tool use, reduce the labor in developing the tools, and protect autonomy by safeguarding end users' core work.

We gathered data on the challenges that AI tool implementation presented to hospital managers, end users, and tool developers, focusing particularly on the decision support tools that were successfully implemented. Although this research focused on the implementation of AI decision support tools in health care, we have found that the issues and dynamics we identified are also present in other settings, such as technology, manufacturing, insurance, telecommunications, and retail.

The Roots of End User Resistance

The disconnects between what AI project teams hope to implement and what the end users willingly adopt spring from three primary conflicts of interest.

1. Predictive AI tools often deliver the lion's share of benefits to the organization, not to the end user. The predictions provided by AI tools allow for earlier interventions in an organization's value chain, with the potential for both the organization and downstream stakeholders to improve quality and reduce costs. However, there are often no direct benefits to the intended end users of the tools, as in the case above, where ER clinicians were asked to use a tool that produced benefits for ICU clinicians.

A similar situation occurred at an online retailer developing an AI tool to flag inbound job candidates whose resumes matched a profile based on employees who had been successful in the organization in the past. HR sourcers, the targeted end users for the tool, often neglected these inbound candidates in favor of outbound search through platforms such as LinkedIn, because they sought to attract a large number of candidates with difficult-to-find technical skills and few inbound candidates had the required skills. Yet inbound candidates were more likely to accept job offers than were candidates sourced through other means, so the tool would benefit the organization as a whole, as well as HR interviewers downstream from the sourcers.

2. AI tools may require labor by end users who are not the primary beneficiaries of the tools. AI tools require a laborious back-and-forth process between developers and end users. Technology developers have long engaged in user-centered design, using task analysis, observation, and user testing to incorporate the needs of end users. But AI tools require a deeper level of engagement by end users.

Because a large volume of high-quality data is required to build an AI tool, developers rely on end users to identify and reconcile data differences across groups and to unify reporting methods. Developers also rely on end users to define, evaluate, and complement machine inputs and outputs at every step of the process, and to confront assumptions that guide end user decision-making.

In cases where downstream stakeholders or top managers are the primary beneficiaries of an AI tool, end users may not be motivated to engage in this laborious back-and-forth process with developers. For example, ER doctors were not interested in contributing their time and effort to the development of the tool for identifying low-risk heart attacks.

Researchers at Oxford University found a similar problem in a telecommunications company developing an AI tool to help salespeople identify high-value accounts.[1] While top managers were interested in providing technical expertise to the salespeople, the salespeople valued maintaining personal and trustworthy customer relationships and using their own gut feelings to identify sales opportunities. They were not enthusiastic about engaging in a labor-intensive process to design, develop, and integrate a tool that they didn't believe would benefit them.

THE ANALYSIS

- The authors observed the design, development, and integration of 15 AI decision support tools over the past five years at Duke Health.
- They gathered data on the challenges that AI tool implementation presented to hospital managers, end users, and tool developers, focusing on decision support tools in particular.
- They identified best practices for managing stakeholder interests that led to successful tool adoption in the health care setting, and confirmed that similar dynamics are present and respond to similar interventions in other sectors as well.

3. Prescriptive AI tools often curtail end user autonomy. AI decision support tools are, by their nature, prescriptive in that they recommend actions for the end user to take, such as transferring a patient to the ICU. The prescriptions provided by AI tools allow internal third-party stakeholders, like organizational managers or stakeholders in different departments, to gain new visibility into, and even some control over, the decision-making of targeted end users for the tools. Internal stakeholders such as senior managers were previously only able to establish protocols for action, which end users would interpret and apply according to their own judgment about a particular case. AI tools can now inform those judgments, offer corresponding recommendations, and track whether end users accept those suggestions — and thus they have the potential to infringe on end user autonomy.

For example, once Duke's tool for identifying low-risk heart attacks had been implemented, when an ER clinician chose to admit a heart attack patient to the ICU, senior managers and ICU clinicians could see what the AI tool had recommended and whether the ER clinician had followed the recommendation. ER clinicians didn't like the idea of others, who didn't have eyes on their patients, reaching into their domain and trying to control their decisions.

A study of the use of AI tools in retail found similar dynamics.[2] Stanford researchers examined the implementation of an algorithmic decision support tool for fashion buyers. They had historically relied on their experience and intuition about upcoming fashion trends to decide which garments to stock in anticipation of future demand. For example, the buyers in charge of ordering men's jeans had to make choices about styles (skinny, boot cut, straight) and denim colors (light, medium, dark). The buyers had considerable autonomy and were not used to having the impact of their intuitive judgments explicitly modeled and measured.

Encouraging Front-Line Adoption

We found that in order to successfully implement AI tools in the face of such barriers, AI project leaders need to address the imbalance between end user and organizational value capture that these tools introduce. In practice, that means increasing the end user benefits associated with tool use, reducing the labor in developing the tools, and protecting end users' autonomy by safeguarding their core work. (See "Overcoming Resistance to Front-Line AI Implementations.")

OVERCOMING RESISTANCE TO FRONT-LINE AI IMPLEMENTATIONS

AI developers can increase the likelihood of tool adoption by identifying tactics to increase a tool's benefits to end users, reduce their labor, and protect their autonomy.

AI IMPLEMENTATION CHALLENGES	SOLUTIONS FOR OVERCOMING IMPLEMENTATION CHALLENGES
The tool might deliver benefits to third parties rather than targeted end users.	**Increase end user benefits:** • Identify the end users' pain points. • Develop a suite of interventions. • Increase incentives for end users to accomplish the outcomes the AI tool is designed to improve.
The tool might require labor by end users who are not the primary beneficiaries of the tool.	**Reduce end user labor:** • Engage third-party stakeholders in data construction, and start with currently available, smaller data sets. • Engage third-party stakeholders in model evaluation, and simplify evaluation steps for end users. • Engage third-party stakeholders to take on some of the work required for tool use, and simplify the user interface.
The tool might curtail the autonomy of end users.	**Protect end user autonomy:** • Protect the tasks that end users see as core to their work. • Allow end users to help evaluate the tool. • Involve end users from day one.

As AI tool developers keep organizational goals in mind, they also need to focus on how a tool can help the intended end users fix problems they face — or adjust to new workload demands that result from using the tool.

1. Increase end user benefits. End users will be more likely to adopt tools if they perceive a clear benefit for themselves. AI project leads can use the following strategies to help make that happen.

Identify the end users' "rock in the shoe." Even as AI tool developers keep organizational goals in mind, they also need to focus on how a tool can help the intended end users fix problems they face in their day-to-day work — or adjust to new workload demands that result from using the tool. For example, when Duke cardiologists asked project team members to build an AI tool to detect patients with low-risk pulmonary embolism (PE) so that the patients could be discharged to an outpatient setting rather than being treated in a high-cost inpatient setting, project team members immediately reached out to the ER clinicians who would be the actual end users of such a tool. The PE project team members learned that the "rock in the shoe" for ER clinicians was rapidly preparing low-risk PE patients for discharge from the hospital and ensuring that they would get needed outpatient care.

AI project leaders attempting to implement the HR tool for screening inbound candidates used this same strategy of identifying the pain point for HR sourcers. The developers learned that HR sourcers couldn't schedule interviews for candidates as quickly as they would like because the downstream interviewers didn't have the required bandwidth.

It may seem obvious that AI leaders should focus on how a tool can help the intended end users fix problems they face in their day-to-day work. So why do AI project leaders often fail to do it? Because the people who approach these leaders in the first place, and who provide the resources for tool development, are often the top managers or downstream stakeholders who stand to gain the most from the AI tool. Project leaders often see them as the primary customers and can lose sight of the need to get the intended end users on board.

Develop interventions that address the end users' problem. Introducing the PE tool at Duke threatened to exacerbate ER clinicians' problem that there was no easy way to ensure that low-risk patients could easily and reliably be scheduled for outpatient follow-up once they were identified. Once team members learned this, they began to focus on how ER clinicians could easily get these patients follow-up appointments at clinics.

Similarly, developers of the HR screening tool noted that HR talent sourcers had a hard time scheduling interviews for the candidates flagged by the tool. So developers considered how to increase the bandwidth of HR interviewers and wound up suggesting engaging a provider of pre-interview screening services to decrease the workload of the current HR interviewers.

Increase incentives for end users to accomplish outcomes the AI tool is designed to improve. End users who are expected to use a new AI tool to guide their decision-making are often not measured and rewarded on the outcomes the tool is designed to improve. For example, ER clinicians at Duke were measured based on how well they identified and treated acute, common problems rather than how well they identified and treated rarer problems like low-risk PE. Team members worked with hospital leaders to revise the incentive system so that ER clinicians are now also measured based on how well they identify and triage low-risk PE patients.

Similarly, the top managers hoping to implement an AI tool for candidate screening in our earlier example recognized that they would need to change incentives for end users to accomplish the outcome the AI tool was designed to improve. When HR staff members used the AI tool, they would be seen as less productive if evaluated only on traditional performance measures such as total number of candidates sourced with difficult-to-find technical

skills. Managers realized that they would need to adapt their evaluation and reward practices so that employees had incentives not only to source a high number of candidates with difficult-to-find skills but also to source a high number of candidates who eventually accepted job offers.

Of course, AI leaders can't easily increase incentives for end users to accomplish the outcomes the AI tool is designed to improve, because the stakeholders who stand to gain the most from the tool are often not the people who manage performance and compensation for the targeted end users. AI project leaders often need to gain the support of senior managers to help change these incentives.

2. Reduce end user labor in the design, development, and integration of AI tools. There are a number of ways that AI development teams can minimize the extent to which they call on end users for help.

During tool design, minimize end user labor associated with constructing relevant data sets. The data used to train AI tools must be representative of the target population. This necessitates that the volume of training data be large, but assembling such data and reconciling differences across data sets is very time-consuming. AI project leaders can minimize end user labor associated with such work by engaging third-party stakeholders in data construction. For example, Duke project team members worked on an AI tool to increase early detection of patients at high risk of advanced chronic kidney disease (CKD). Data for the tool needed to be drawn from both electronic health records and claims data, and the two data sources were not consistent with each other. Instead of burdening the intended end users of the tool (primary care physicians, or PCPs) with data-cleaning tasks, the team validated the data and normalized it across sources with the help of nephrologists (physicians with kidney expertise), who were the primary beneficiaries of the tool.

AI project leaders can also start with a good-enough AI tool that can be trained using currently available, often smaller data sets. For example, an AI leader developing a tool to help salespeople in a manufacturing organization identify potential high-value accounts wanted to minimize end user labor associated with assembling relevant data sets. Rather than asking salespeople to take the time to better log data related to the different milestones of the sales process (such as lead, qualified lead, and demo), the AI team first built a system with models that were good enough to use but required a smaller amount of training data and thus less data preparation by the salespeople.

During tool development, minimize end user labor associated with testing and validation. Once an initial AI tool has been built, development teams need to engage in a time-consuming back-and-forth process with end users to help test and validate the tool's predictions and modify the tool to improve its real-world utility. This work can be minimized by engaging third-party stakeholders in the reviews. For example, project leaders developing the AI tool to identify the best sales leads in a manufacturing organization enlisted the head of process improvement rather than the salespeople to help with the initial evaluation of the tool. The head of process improvement helped them identify a success metric of conversion rate — the percentage of potential leads that later became customers. He also helped them do an A/B test comparing the conversion rate for sales leads identified by the tool versus those identified in the regular sales process.

AI project leaders can also frequently do more to help end users more easily evaluate models. For example, Duke project team members developing the tool to detect CKD found that end users had difficulty determining the risk score threshold for

Assembling large volumes of training data and reconciling data sets is time-consuming. AI project leaders can minimize end user labor associated with such work by engaging third-party stakeholders in data construction.

considering patients to be at high risk. Project team members used interactive charts to help them see what percentage of the patients with a certain score eventually developed CKD. This allowed the end users to more easily set thresholds for high-risk versus medium-risk patients.

During tool integration, minimize end user labor associated with tool use. Attention to simplifying the user interface and automating related processes can help reduce users' sense that a tool is loading them up with extra work. One rule of thumb is to never ask the user to enter data that the system could have automatically retrieved. It's better still if you can actually predict what the user will want and pre-stage the interface so that it is available to them.

In another example involving an AI tool for candidate screening, researchers at the Kin Center for Digital Innovation at Vrije Universiteit in Amsterdam found that developers first made it easier for HR recruiters in a consumer goods company to use the tool by color-coding how well a given candidate matched against employees who had succeeded in the organization in the past. Records of candidates with a match of 72% or higher were colored green, and those below were colored orange.[3] Eventually, developers automated the process even further so that recruiters could click a button and the tool would automatically filter out all candidates with lower predicted success.

Another tactic is to reassign some of the additional work required for tool use, if possible. For example, Duke physicians targeted for use of the kidney disease tool suffered alert fatigue, because they were receiving many other automated clinical decision support alerts as well. Duke project leaders reduced the number of physician alerts from the tool by creating a new clinical position and assigning that person to use the tool to remotely monitor all Duke PCPs' patients — over 50,000 adults. When the tool flagged a patient as being at high risk of CKD, that clinician prescreened the alert for the PCP by conducting a chart review. If the clinician determined that the patient was indeed at high risk of CKD, they sent a message to the PCP. When the PCP received this message, if they agreed that the patient was likely to have CKD, they referred the patient for an in-person visit to a nephrologist.

3. Protect end user autonomy. Humans value autonomy and gain self-esteem from the job mastery and knowledge they have accrued, so it's natural that users may feel uneasy when AI tools allow stakeholders from outside of their domain to shape their decision-making. Successful AI implementations require sensitivity to how they may affect end users' relationship with their work. Developers can attend to it in the following ways.

Protect the tasks that end users see as core to their work. When Duke project team members developed an AI tool to help better detect and manage sepsis, an infection that triggers full-body inflammation and ultimately causes organs to shut down, many of the ER clinicians targeted as end users of the tool pushed back. They wanted to retain key tasks such as making the final call on the patient's diagnosis and placing orders for required blood tests and medications. The project team configured the AI tool so that its predictions did not infringe upon those tasks but did assist ER clinicians with important tasks less valued by the clinicians.

In the case of the fashion buyers, the tool developers learned that buyers wanted to maintain what they saw as creative or strategic tasks, such as deciding what percentage of their overall jeans purchase should comprise boot cut styles or red denim. The project team configured the tool so that if the buyer's vision was to have red denim, the buyer could add this as an input to the tool's recommendations so that the red denim order was filled first.

It may seem self-evident that developers should avoid creating AI tools that infringe on the tasks that end users see as core to their work, but AI project leaders may fall into this trap because intervening around core tasks often promises to yield greater gains. For example, in one retail organization, developers initially built a tool to inform fashion buyers' decision-making. Suboptimal decision-making at this stage had two effects: lost revenue opportunities from not stocking the right products to meet demand, and lost gross margin from buying the wrong product and subsequently having to mark it down. However, fashion buyers rejected the tool, so developers pivoted and went to the other end of the process — developing a tool that helped store merchants decide when and how much to mark down apparel that was not selling.

This tool enabled much less value capture, because it focused only on the final phase of the fashion retail process. However, smart AI leaders have learned that intervening around a circumscribed set of tasks with a tool that actually gets implemented is a lot more useful than intervening around end users' core tasks with a tool that delivers more value in theory but isn't used in practice.

Allow end users to help evaluate the tool. Introducing a new AI decision support tool often requires replacing a current tool that may be supported by targeted end users with a new tool that threatens to curtail their autonomy. For example, the AI-based sepsis tool threatened the autonomy of the ER clinicians in a way that an existing rules-based tool for detecting sepsis did not. To protect end user autonomy, project team members invited key stakeholders who had developed the tool currently in use and asked for their help designing an experiment that would test the effectiveness of the new tool.

Researchers at Harvard Business School found similar dynamics in their study of a retail organization that developed an AI tool designed to help fashion allocators decide how many of each particular shoe size and style to ship to which store.[4] The visibility that the tool gave to managers outside of the process had the potential to threaten the autonomy of the allocators in a way that the existing rules-based tool did not. To protect autonomy, project team members enlisted the fashion allocators in designing an A/B test to evaluate the performance of the existing tool versus the new AI tool.

Giving target end users a say in the evaluation process makes perfect sense, so why don't all AI project team leaders do it? Because whenever you involve end users in choosing which areas of their work to subject to testing, they will pick the hardest parts. However, since they are the ones who will need to act on the recommendations, you can't skip this step.

Involve end users from day one. AI project leaders frequently keep AI tool development quiet in the early stages to forestall expected user resistance. But project leaders who don't involve users early are much less likely to succeed. Users will resent that they were brought in late, and they will hold a grudge. Even if an AI tool can fully automate a process, end users will need to accept the tool in order for it to work. Successful AI project leaders have learned that involving end users at the outset of the project makes that much more likely.

BEHIND THE GLITTERING PROMISE of AI lies a stark reality: The best AI tools in the world mean nothing if they aren't accepted. To get front-line users' buy-in, leaders have to first understand the three primary conflicts of interest in AI implementations: Targeted end users for AI tools might realize few benefits themselves, be tasked with additional work related to development or use of the tool, and lose valued autonomy. Only then can leaders lay the groundwork for success, by addressing the imbalance between end user and organizational value capture that these tools introduce. Success doesn't arise from big data, sparkling technologies, and bold promises. Instead, it depends on the decisions made, day in and day out, by employees on the ground. To make the promise of AI a reality, leaders need to take into account the needs of those who are working on the front lines to allow AI to function in the real world.

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Set Up to Fail

Poor design of C-suite jobs can block executives from succeeding in their roles.

BY KIMBERLY A. WHITLER, ED TAZZIA, AND STEPHEN MANN

Why is the average tenure of a C-suite executive a brief 5.3 years? And why do chief marketing and chief information officers last barely more than four years in the job, on average?[1]

The answer may lie between the lines of the job specifications shopped around by executive recruiters. One of us (Kimberly A. Whitler) was approached to gauge interest in a CMO position and, as she reviewed the 12-page job spec, realized that she couldn't in good conscience recommend anyone for the role. Based on the responsibilities, expectations, and ideal candidate qualifications described in that document, the role was poorly designed. It was setting up the incoming CMO for failure.

Unfortunately, based on our experience and research, many C-level jobs are poorly designed — and the individuals interviewing for these jobs are unaware of it. We shared that CMO job spec with a group of senior-level marketers and asked how many would be interested in the role, assuming it offered competitive compensation and an attractive location. A large majority of the executives were interested: They had no idea how to assess how well aligned the responsibilities, performance expectations, and qualifications were — and whether the job design set them up to succeed or fail.

An Expensive Problem

What makes the short C-level tenure surprising is that it is similar to that of average salaried workers, despite the much greater effort, expense, and time spent identifying and filling C-level roles.[2] Companies pay hundreds of thousands of dollars to executive recruiting firms and may involve other C-suite executives, including the CEO, and potentially the board of directors, in defining and approving C-level roles.

We believe that one of the issues contributing to C-level turnover is a lack of alignment on key elements of the role. Consequently, individuals wind up stepping into a role that is poorly designed, and ultimately they either become frustrated and leave or disappoint the CEO and are asked to leave. But we believe this can be remedied. Here, we explain how we arrived at our conclusions and share an alignment tool that can help design better C-level jobs.

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To understand C-suite job design, we analyzed a total of 185 C-level job specifications that included descriptions for CFO, CIO, and CMO roles. A job spec is typically created by the executive recruiting firm hired to find candidates. It is based on input from executives at the hiring company, who will later confirm that it is an accurate representation of the position. After that, the document is shared with potential candidates. Consequently, the job spec is *the* pivotal document in the candidate sourcing process: It defines the job that the recruiting firm has been contracted to fill, and it establishes the expectations, requirements, and duties of the job that a prospective candidate will accept.

Our objective was to understand within-role alignment, or the degree to which expectations, responsibilities, and experience synced up and matched one another. The job specs came from the four largest executive recruiting firms, midsize recruiting firms, and a number of boutique firms that specialize in specific industries or positions.

The Problem With C-Level Job Descriptions

We found that across the CFO, CIO, and CMO functions, there is significant misalignment within individual C-level jobs. In a well-designed role, expectations for how a new C-level leader will impact the company should match the responsibilities given to the leader as well as the desired experience that the ideal candidate should possess. For example, if a CFO is expected to grow the company through mergers and acquisitions but does not have responsibility for a critical activity such as the analysis of M&A opportunities (because another functional leader does), then there is a mismatch between expectations and responsibility. Further, if the CFO is expected to lead M&A activity but there is no requirement that candidates have experience leading successful M&As, then there is a mismatch between expectations and experience. While this may seem obvious, the analysis suggests that in practice, it isn't. (See "C-Level Job Misalignment.")

We also found variance in the degree of misalignment across the three C-suite functions. For example, the CIO job specs had higher levels of misalignment on expectations-responsibilities (53%) and experience-responsibilities (49%) than those of CFOs or CMOs. CMO specs had the highest level of misalignment on expectations-experience (41%) compared with those of CFOs and CIOs.

Importantly, the CIO and CMO job specs generally described a greater variety of expectations, responsibilities, and experiences than did the CFO specs, which indicates a greater degree of variability in how the CIO and CMO roles can be constructed and configured. Thus, if CFO roles are more consistent across companies, then the training and experience of individuals will also be more consistent, making it easier to create aligned roles — which may be reflected in CFOs' slightly longer average tenure of 5.1 years compared with CIOs and CMOs. Conversely, if the composition of roles is more varied, it can increase the difficulty in designing the job and potentially contribute to the higher CIO and CMO turnover observed.

The consequence of misaligned roles can be significant. Consider the following rather common example we observed. If a job spec for a CMO indicates that they are expected to "create and drive the growth agenda," but the CMO does not have responsibility for corporate strategy, product, innovation, pricing, distribution, or sales, there is clear misalignment. Here, the CMO is expected to drive growth and yet doesn't have responsibility for most of the growth levers. What happens as the CMO starts a job with such a mismatch? The CMO may attempt to deliver on expectations by trying to

THE RESEARCH

The authors set out to investigate the quality and within-role alignment of C-level job design.

They analyzed a total of 185 C-level job specifications that included descriptions of CFO, CIO, and CMO jobs.

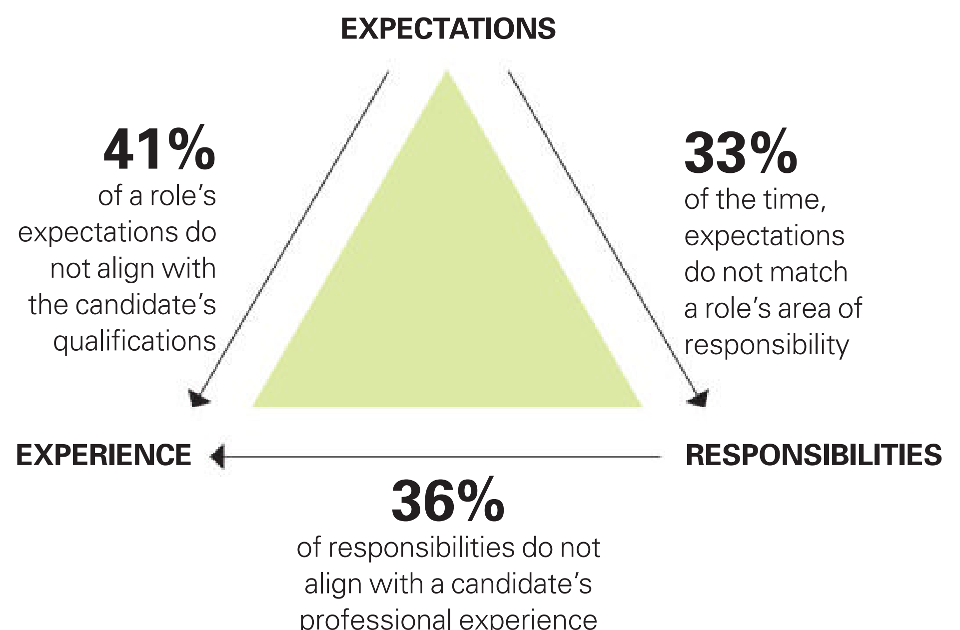
These confidential job specifications were created by the four largest executive recruiting firms and some midsize and boutique firms and were sourced from the firms and individual candidates.

The authors thus obtained a convenience sample (what was available) rather than a random sample.

Key elements were coded, including expectations, responsibilities, and the experience and skills required of the ideal candidate, in order to analyze the degree to which skills matched responsibilities, for example.

C-LEVEL JOB MISALIGNMENT

An analysis of 185 C-level job specs showed that a significant percentage are poorly designed.



JOB ALIGNMENT MAP

Use this tool to develop better job specifications — or to evaluate whether the role described in an existing job spec is well designed.

JOB EXPECTATIONS	RESPONSIBILITY REQUIRED		RESPONSIBILITY ASSIGNED	PERFORMANCE MEASURES
What specific organizational outcomes is the individual in the role expected to drive?	**What are the specific duties and functions over which the role needs to have authority in order to meet expectations?**	=	**What are the specific areas of responsibility assigned? Do they match those required to meet expectations?**	**What are the specific, quantifiable measures against which the C-level executive's performance will be evaluated?** To ensure an aligned role, the measures should be appropriate indicators of progress toward expectations.
	SKILLS REQUIRED		**SKILLS LISTED**	
	What are the specific skills, experiences, and training that the individual in the role needs to have mastered in order to meet expectations?	=	**What are the specific skills and qualifications listed in the job spec? Do they match those required?**	

influence all of the owners of growth — before developing the relationships underlying such influence. The CMO may realize fairly quickly that the role relies completely on influence — a situation that will make it difficult to achieve expectations. This is likely to lead to conflict, friction, and frustration while the CEO becomes disappointed as progress languishes. In this case, the misalignment between expectations and responsibilities can lead to significant CMO dissatisfaction with the role, and CEO perception of CMO failure.

Prepare to encounter the typical pushback we hear from leaders when we discuss the issue of misalignment: that those in C-level roles are often required to wield influence in addition to authority, and that if they need complete authority, they aren't suited for these roles. Our response is that C-level leaders understand that their jobs require influence. The problem is that on a spectrum between complete responsibility and no responsibility/total influence, many of the job specs describe a role situated near the "total influence" end of the spectrum. The more the job depends on influence, the greater the risk — for both the company and the executive. It sets up the C-level leader to wield influence — often immediately — in areas where others will naturally be resistant. Executives can resolve this issue either by defining how each C-level leader specifically contributes to a more macro business outcome or by horizontally aligning C-suite leaders on shared business outcomes.[3]

Get Job Specs Into Alignment

We developed a tool to help C-level leaders assess job specs for specificity and internal alignment. (See "Job Alignment Map.") Almost none of the job specs in the research were adequately specific on all of the key role elements. The map also provides a framework for a company or executive recruiter to design an aligned role from the start. The recruiter can distill a job into its key parts, reach agreement with company executives, and then write the spec based on that work.

When using this tool to design or assess a job spec, keep the following in mind.

Specify role expectations with detail and clarity. Do not use phrases that are generic (such as "drive growth") or grandiose (such as "drive company transformation") to set expectations for the role. Rather, be specific, such as "drive revenue growth by 3% within a year," or "improve brand health measures on product quality from X to Y by 2023," or "increase EBITDA by 5% within six quarters."

Identify the responsibilities required to achieve expectations. Returning to our earlier example, if the CMO is supposed to drive revenue growth to a specific level, what are the levers that can impact growth? If the levers report to other individuals, then the expectations should be modified accordingly.

Identify the skills required to achieve expectations. These should match the responsibilities outlined above. For example, if the responsibilities required to achieve a specific level of sales growth

include managing the product pipeline, then the ideal candidate should have expertise in creating and managing a successful innovation program.

Compare the responsibilities assigned on the job spec to the responsibilities required to achieve expectations. Ideally, these should be the same. This is a crucial area of assessment, as expectations frequently transcend the responsibilities assigned. Such roles require the executive to exercise influence without much authority. Expecting someone to achieve outcomes requiring functional support over which they have no authority should be a red flag for candidates.

Resolve the gap between the responsibilities assigned and the responsibilities required. There are two ways to manage such disparities. One involves redesigning the role to ensure that the responsibilities assigned are the same as the responsibilities required in order to achieve expectations. The second approach involves aligning C-level leaders. One CMO job expectation might be to improve the customer's shopping experience such that store-level sales improve by 3% by 2023. That expectation hinges on rolling out technology to enhance the retail experience, but in this hypothetical instance, the CMO isn't assigned responsibility for technology — the CIO is. An option here would be to ensure that both the CIO and the CMO are jointly held accountable for improving the customer's shopping experience (and commensurate sales). This has an added benefit of ensuring that the CEO understands that multiple C-level leaders are responsible for leveraging technology to enhance the customer's shopping experience.

Compare the skills listed in the job spec with those needed to meet expectations. Ideally, the skills listed in the job spec should match those needed to execute responsibilities and meet goals. This rarely occurs. The greater the disparity between the two lists, the more challenging it will be for the candidate to succeed in the job. High turnover suggests that organizations are often challenged to identify the right candidates; consequently, it's critical that candidates assess for themselves whether they have the skills that are really needed to meet expectations — not just the ones listed on the spec.

Identify the measures against which role success will be judged. Most job specs fail to do an adequate job of detailing key performance metrics that correspond to the high expectations for the role. If the expectation is that a CMO will improve the customer's shopping experience, what measures other than sales will hold the CMO accountable, and are those drawn from a survey, reviews, social media, or some other method? What specific customer experience improvements do they want to see?

WE HOPE THAT by shedding light on poor job design, we have also illuminated an important underlying cause of C-suite turnover, particularly for CMOs and CIOs. By using our tool to analyze job specs, organizations can design better jobs, and candidates can gain insight to renegotiate roles.

The greater the alignment between expectations, experience, and responsibilities, the clearer the role will be to all involved, and the greater the chance of success. Given the short tenure of C-level leaders, taking time to design an aligned role upfront can yield significant value to both parties.

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IPO Disclosures Are Ripe for Reform

Current financial disclosure rules let would-be public companies shape a rosy narrative about their prospects and obscure information that investors should know.

BY ASWATH DAMODARAN, DANIEL M. MCCARTHY, AND MAXIME C. COHEN

Rules meant to protect investors have turned out to be no match for bankers pitching today's businesses to the public markets.

In theory, disclosures required of would-be public companies should provide investors with the critical information needed to determine whether they want to buy in, and at what price. Less obviously but equally important, disclosures should bolster good management practices by establishing sound performance metrics. However, existing disclosure regulations fail on both counts. They are outdated, and it is time for them to change.

Current rules were designed for a different era, when the companies going public were more established and had proven business models. Today's companies, in contrast, often have untested business models. What companies disclose about their customers is completely voluntary, so executives can — and do — select data that paints their companies in the best possible light. Their disclosures are bloated, uninformative, and often misleading, and investors lack the data they need to make informed decisions or to hold managers and board members accountable.

As an alternative to one-size-fits-all disclosure rules, we propose *triggered* disclosures tailored to the value drivers of the company going public. Under these disclosures, claims about customer value and potential market size must be supported by consistent, objective collection of baseline data related to those claims. These slimmer, more focused disclosures would provide investors with a better basis for

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valuing and pricing today's companies. They also could force founders and managers to tell more realistic stories about their businesses, not fairy tales, while holding them accountable for delivering on their promises.

Disruptions in the IPO Game

As the number of initial public offerings has surged over the last few years, we've seen significant changes in both the types of companies seeking to go public and the investor base. Many companies enter the market with large losses and no tangible pathway to profitability. While 80% of the companies that went public between 1980 and 1990 were profitable, only 20% of those going public between 2016 and 2020 were. Companies are also waiting longer to go public — the age of the median company was 12 years in 2020, compared with six years in the 1980s — and spending more time scaling up revenues instead of building profitable business models. A growing fraction of these businesses emphasizes the number of users or subscribers they have instead of traditional financial measures such as earnings.

In the meantime, the investor base has grown to include many small retail investors aided by the introduction of low- or no-cost trading platforms like Robinhood. These less sophisticated investors almost surely have less time to devote to the careful study of disclosure statements than the institutional clients and wealthy individuals to whom investment banks have historically marketed IPOs. And even though these newer investors have more access to investment advice and data on businesses that plan to go public, they also are more likely to take a company's published metrics at face value and be duped by misleadingly grandiose claims.

The Disclosure Dilemma

The U.S. Securities and Exchange Commission's rules on disclosure have not kept up with these disruptions. The Securities Act of 1933 first laid out the information companies have to provide in an IPO prospectus (known as the Form S-1), which requires that a company issuing stock provides information on its business model and the risks in that model, and a description of the planned share offering and what it plans to do with the proceeds.

Investors have always struggled with pre-IPO companies' lower profiles, lack of a standardized financial history, limited historical pricing data, and opaque share counts. But these issues have become more of a concern as more money-losing companies have gone public — often with dual-class shares that have different voting rights — and the expanded use of stock-based compensation.

Disclosure Bloat

Through their disclosure rules, regulators have tried to accomplish two sometimes contradictory objectives: to protect investors and to make it easier for companies to go public. Although the core requirements haven't changed much, the filings themselves have become longer and more detailed, which in some sense runs contrary to both objectives. Apple's and Microsoft's prospectuses, at 73 and 69 pages, respectively, were considered long at the time. In contrast, Uber's 2019 prospectus was 285 pages long, with a separate 94-page section for its financial statements and other disclosures. Airbnb needed a whopping 350 pages for its Form S-1, and another 84 pages for the appendices.

Despite their burgeoning length and level of detail, disclosures have not necessarily become more useful. The additional material often provides little insight into the company's outlook and is frequently misleading. Some of the most important data remains undisclosed in the following ways:

The risk profile section is uninformative. Although well intentioned, this section of the prospectus has lost its focus. Originally designed to provide transparency about the risks that investors face with low-profile companies, they have become a catchall where lawyers state any risks, no matter how unlikely, that the company could be sued over if excluded. Relevant and material risks can end up getting missed when placed alongside a mountain of irrelevant ones.

Share counts are confusing. The requirements for disclosing the number of outstanding shares have not changed substantially since the 1980s. But since that time, the types of shares that companies issue have become more complex, adding to confusion about the number of shares actually outstanding.

In the final prospectus before its IPO, Airbnb reported that there would be about 47 million class A

Companies may cherry-pick details that emphasize the quality or quantity of their users or subscribers. How these factors link to revenues and profits is often only loosely defined, with critical details left out.

and nearly 491 million class B shares after its IPO. However, the count excluded nearly 31 million options on class A shares and almost 14 million options on class B shares issued at undisclosed strike prices. Plus it left out more than 37 million units of restricted stock that were subject to undisclosed service and vesting requirements.

In general, the rules on reporting share counts in a prospectus are lax, and the reporting of some types of share ownership is voluntary. This is especially true with restricted shares, where vesting and other contingencies enable companies to undercount the potential number of shares outstanding. This leaves IPO investors with an ownership stake that is possibly less valuable than expected.

Stories are grand — but misleading. The SEC has strict rules in place limiting companies' ability to make projections about future revenues or earnings (although companies that go public via a special-purpose acquisition company, or SPAC, have more leeway). But it does not prohibit companies from disclosing metrics — and the definitions of those metrics — that make their valuations appear as big and appealing as possible. As expected, companies are taking full advantage of this.

One often misleading metric is total addressable market (TAM), which purports to show a young company's growth potential by estimating the total possible demand for its product or service. While the TAM is widely viewed as central to valuing a young company, the lack of consensus on how to estimate its value has allowed companies to inflate numbers, sometimes to the point of absurdity. A significant number of companies that have gone public over the past decade have described unrealistically large TAMs to justify a higher valuation.

Uber, for instance, claimed that the TAM across its three business lines — ride-sharing, trucking, and food service — was $12 trillion, or roughly 15% of the world's gross domestic product. Airbnb estimated the short-term stay business to be $1.2 trillion, double the $600 billion in revenues that hotels globally generated in 2019. While both companies can plausibly claim that they will draw in new users and increase the overall size of their markets, the real question is by how much and over what time frame.

For some companies, the path to a higher IPO price comes from cherry-picking details that emphasize the quality or quantity of their users or subscribers. How these factors link to revenues and profits is often only loosely defined, with critical details left out. For example, Uber disclosed how many riders were active over time but did not provide information about its customer acquisition cost (CAC) or how long customers were retained after they were acquired. Airbnb disclosed how long customers were retained after they joined but did not reveal the CAC for those listing or renting properties.

Another potentially misleading metric is adjusted earnings before interest, taxes, depreciation, and amortization (EBITDA). Many money-losing companies adjust their disclosed earnings to try to make themselves look better by adding back what they categorize as noncash expenses or extraordinary items. These adjusted EBITDA numbers are labeled as unofficial measures, but companies disclose them in the hope that investors and analysts will base their pricing on them.

While some adjustments are legitimate, others are highly misleading. In particular, some companies add back stock-based compensation and treat it as a noncash expense. This disregards the reality that employee options and restricted stock represent real costs and as such are genuinely relevant expenses, especially for young companies. Some are even more aggressive in their adjustments, adding back important cash expenses such as marketing costs.

The SEC's rules about such disclosures are designed to protect investors from overly optimistic forecasts. Yet they still allow many companies to selectively disclose uninformative, misleading metrics without the essential details that would enable investors to make sense of the measures and hold companies accountable for meeting them. This not only leaves investors in the dark but also hurts management accountability. Through selective disclosure, executives are effectively able to move their own performance goalposts. This lack of management discipline sets a bad precedent for the next cohort of executives building companies that they hope to take public.

Guidelines to Fix Disclosures

The problem, as we see it, isn't that the SEC mishandles individual disclosure issues. Rather, it and other regulators misunderstand the nature of companies now going public and the information investors need. Today's IPO companies are no longer mostly young, small, and turning the corner on profitability, and IPO investors are not primarily larger institutions. As a result, the SEC's disclosure requirements that were written for another era are no longer up to the job. It may make more sense to start fresh, with the following four guiding principles:

Keep the rule book lean. It's the nature of regulation that new disclosure requirements continue to be added over time. We suggest a variant of a "disclosure in, disclosure out" rule so that when a new rule is added, it must be at the expense of an old, outdated requirement.

Require more information about valuation. While companies going public have no market price history, they have had to raise funds from venture capitalists and investors who set an implicit valuation of the company. Companies and their bankers often selectively use these venture capital rounds to justify the price of their IPOs, but there is no requirement that these valuations be disclosed. We argue that when private companies go public, they should all be required to disclose venture capital raised over their history and the estimated valuation in each round. This would make clear how much cash the company has burned through its lifetime and also would provide transparency on venture capitalists' behavior and the company's valuation since its inception.

Standardize the share count. Rather than letting companies judge for themselves what to count in their shares outstanding, we recommend that restricted share units be counted as part of shares outstanding and that options be separated out, along with exercise prices and maturity. These changes will make it clear just how much ownership an investor will receive when buying shares in the IPO and enable a more accurate estimate of how much share prices should appreciate when a company achieves a certain overall equity valuation.

Require companies to tell the whole story. The solution to companies' tendency to pad their disclosures with misleading or uninformative details about their business potential isn't to restrict it. Markets abhor vacuums, and preventing companies from forecasting the future only allows others who are less scrupulous and less informed to fill the space with their own stories. The status quo lets pre-IPO companies off the hook, since they can selectively provide the outline of a narrative that paints them in the most favorable light without filling in key details.

Company disclosures should be tight, relevant, complete, and standardized. Leadership should not be given free rein over what disclosures to include and how those disclosures should be defined. Instead, they should be required to include additional disclosures that are triggered by the company's particular business model, its investor base, and the specific claims it makes. Next, we'll discuss how that might work.

Triggered Disclosure

We propose that any company that wants to build its story around certain metrics in addition to basic financial information, such as the balance sheet and income and cash-flow statements, will trigger the required disclosure of a more systematic collection of details that are necessary to understand the economics of its particular business model.

Consider the use of the TAM, which companies going public have increasingly used to support high valuations. The number includes all possible buyers, whether or not they would be interested in the company's products or services at current prices. These figures are often aspirational, with little justification, and companies typically provide

no timeline for how long it will take them to capture that market.

With triggered disclosure, companies that specify a TAM would have to provide the following additional information to prevent them from using the figure as simply a marketing ploy.

What the TAM is based on. Companies disclosing the TAM would also have to specify a more conservative figure known as the serviceable addressable market (SAM), which refers to the number of people who would be interested in a company's current products or services at current prices. They would also have to show exactly how they measured the TAM and SAM (ideally, through survey work conducted by a reputable third-party market research firm) so that investors would have confidence that the figures have a sound basis.

For example, Uber's Form S-1 included in its SAM every trip of less than 30 miles across the 57 countries in which it operated at the time, along with a "near-term SAM" covering 63 countries, without addressing the number of potential customers at current prices. In contrast, Peloton estimated its SAM and related measures using more conventional definitions through extensive survey work. Investors who may be skeptical of a lofty TAM could still look to a well-supported SAM as a more achievable intermediate metric. All prospects are not equal: Some are more inclined toward a company than others. This layered approach acknowledges the reality that the likelihood that prospects will convert to paying customers falls on a continuum.

Estimates of market share. It's one thing to project a TAM in the billions, but unless a company says what share of that market it expects to capture over a specific period of time, the number is worse than meaningless. We recommend requiring that TAM disclosures be accompanied by a forecast of how quickly the company will penetrate that market. The worry that they will be held accountable if their revenues do not measure up to their promises should act as a check on companies that are tempted to significantly inflate their TAMs.

Ongoing disclosure. Companies usually provide a TAM, SAM, and other variants on a one-shot basis, disclosing such figures in their pre-IPO prospectuses and never again. We believe that investors should be given these measures on an ongoing basis, in quarterly filings, annual reports, or supplementary presentations. These updates will allow investors to see how well the company is tracking relative to its previous forecasts and let them know whether conditions have changed. Also, companies that know they will be held accountable for their IPO disclosures after they go public will have an incentive to make those disclosures realistic and achievable.

As long as investors continue to assign premiums for companies that have bigger markets, companies will be tempted to overestimate their TAMs. These recommendations should at least check those tendencies.

Better Insights Into Transaction-Based Companies

While TAM disclosures apply to all types of businesses, transaction-based companies — those whose revenues come from selling a product or service — require other key disclosures that make it possible to accurately assess the quantity and quality of their customers.[1] We suggest that the following should be shared:

Active customer count. Active customers are those who have placed at least one order during a specific time period, and it's important to understand how their numbers change over time. Tracking active customer counts over time provides insight into the drivers of revenue growth, whether that's an increase in the number of buyers,

Requiring managers to report more details about their total addressable market and the economics of user value will force them to think through their valuation stories more carefully before offering them to the market.

an increase in average revenue from each buyer, or a combination of the two. For businesses with a free usage tier, it also illuminates how those revenues are distributed — for example, does 90% of the revenue come from only 5% of users?

The actual period of activity isn't what's most important. Wayfair, Amazon, and Airbnb, for example, define an active customer as one who has placed at least one order over the past 12 months. In contrast, Lyft, Overstock, and many other companies define a customer as active if they placed an order in the past three months. For most companies, either window would be appropriate. What is more important is that this data be disclosed for a sufficiently long time period to reveal the trajectory of growth.

Total orders. Knowing the total number of orders is necessary to understand whether revenue growth is coming from an increase in the number of purchases or from an increase in the value of each purchase. Along with the count of active customers, it can also reveal whether orders are increasing because the company is attracting more customers or because they are shopping more frequently or buying more with each purchase.

Customer acquisition cost. Investors need to know how expensive it is to acquire new customers, making CAC an essential disclosure.

Contribution profitability. Once a company has acquired customers, it must generate profits from them while they are active. It is important, then, to know how customers contribute revenue over time and how that revenue translates into incremental profitability. This variable or *contribution profitability* is calculated by deducting expenses that grow as revenue increases — such as labor and materials, fulfillment, and payment processing — but not expenses that are relatively fixed in nature, such as rent on manufacturing facilities or the salaries of the executive team.

Promotional activity. It can be easy to significantly increase sales through enticing targeted promotions, creating the illusion of rapid growth that may not be sustainable over the long run. But promotional costs are often completely invisible, showing up on income statements as reductions in revenue rather than as expenses. Promotional activity should be explicitly disclosed to understand how it might be influencing revenue growth.

Customer cohorts. Tracking how long different groups of customers have been active is one of the most informative disclosures a customer-based business can provide. Knowing how activity changes the longer that customers stay on a platform and how these patterns are evolving across different customer cohorts can provide investors with unparalleled visibility into the customer acquisition costs or changing retention patterns for each group.

While most businesses are transaction-based, there are other types as well, including subscriber-based businesses, advertising businesses based on user activity instead of direct purchases, and lending businesses. For these, our guiding principles remain the same, although the specific disclosures will be different. (See "Triggered Disclosure Requirements in Summary.")

The Managerial Payoff

While disclosure policies requiring more focused and triggered disclosures are designed primarily to help investors, the shift will also benefit founders and managers.

First, requiring managers to report more details about the TAM and the economics of user value (such as customer acquisition costs and contribution margin) will force them to think through their valuation stories more carefully before offering them to the market. This may dampen the initial pricing of these companies, but these more realistic and detailed stories will provide clearer road maps for creating profitable business models over the long haul.

Second, the metrics required for disclosures can also be used by managers and board members to track how well they are performing relative to their forecasts. If their performance deviates, the metrics can also guide them toward midcourse corrections. Say, for instance, that customer acquisition costs rise much faster than anticipated. If those costs have been disclosed and are available to investors, shareholder pressure can create stronger incentives for management to bring down the costs and enhance the value of yet-to-be-acquired users. Public disclosure creates healthy discipline that, over time, can make companies more robust.

TRIGGERED DISCLOSURE REQUIREMENTS IN SUMMARY

Different revenue models should lead to different disclosure requirements to provide the most relevant information to investors.

TRIGGER	VALUE EFFECTS	INFORMATION NEEDED
Total addressable market (TAM)	In conjunction with market share estimates, TAM sets the framework for revenue growth estimates.	• TAM, SAM, and information bridging the gap between the two • Market share estimates (at least for near years, with long-term targets) • Ongoing metrics that track TAM and SAM over time, relative to original targets
Subscriptions/ subscribers	Value of subscription-based company = value of existing subscribers + value of new subscribers – deadweight costs	• Subscriber count and churn/renewal rates • Contribution profitability of a subscriber • Customer acquisitions/drop-offs • Cost of acquiring subscribers • Cohort data, breaking down revenues/renewal rates by cohort age
Transactions/users	Value of transaction-based company = value of existing transactors + value of new transactors – deadweight costs	• Active customers on platform • Total orders, to estimate order frequency/value per customer • Contribution profit on marginal transaction • Customer acquisitions and cost of acquiring customers • Promotional costs to add customers and increase transactions • Cohort data, breaking down transaction value by cohort age
Advertising/users	Value of advertising-based company = present value of expected cash flows from advertising	• Number of active users on platform • Intensity of platform use by active users • Information collected about users • Advertising placement/fit on platform
Lenders	Value of lender = present value of net interest income from loans – expected cost of defaults	• Total value and average duration of the loan portfolio • Loan volume and default rates by loan type (e.g., subprime versus prime) • Average yield and the company's own cost of raising capital • A valid measure of capital buffer • Information on how and when loan-related fees, including commissions, are assessed/booked

Finally, executives at younger companies, in anticipation of their future IPOs, will be more inclined to manage their businesses in a sustainable way if they know they will be accountable for the wider collection of disclosures that we recommend. The relative youth of their companies provides them with the time they need to make sure that when they are filing their own IPO prospectuses, the customer-related data they have to disclose will be as strong as possible.

It is true that some founders' endgame is to get the highest possible pricing for their company and cash out before the market catches on. But many others aim to build long-standing and valuable businesses. We believe that our disclosure proposals will help them. What's more, if regulators support our recommendations, even the founders looking for the highest possible IPO price will be forced to come around as well.

***Aswath Damodaran** is the Kerschner Family Chair in Finance Education and a professor of finance at the Stern School of Business at New York University. **Daniel M. McCarthy** is an assistant professor of marketing at Goizueta Business School at Emory University. **Maxime C. Cohen** is the Scale AI Chair in Data Science for Retail, a professor of retail and operations management, and codirector of the Retail Innovation Lab at the Desautels Faculty of Management at McGill University.*

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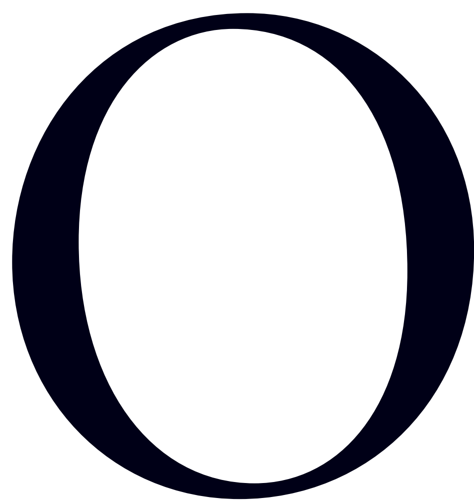
Manage the Risks of Software Reuse

Whether or not your organization develops software, it's likely exposed to the risks of vulnerabilities buried deep within code.

BY GREGORY VIAL

ne of the key ways software development organizations drive efficiency is by drawing on libraries of existing, reusable software components when creating their own software products and services. This helps accelerate digital innovation, but the advantages come with a trade-off: Organizations accept, sometimes unknowingly, a degree of risk that can lead to serious cybersecurity issues.

That risk was highlighted in December 2021, when it came to light that a widely used open-source software framework called Log4j contained a critical vulnerability.[1] The news made headlines because countless pieces of software deployed in organizations, government agencies, and people's homes depend on this logging framework for the Java programming language. Security experts found that exploits built on the Log4Shell vulnerability, as it came to be known, could have devastating consequences for companies and individuals. And exposure to that vulnerability was found to be stunningly broad: The code had become embedded in software systems on a grand scale, introducing a serious vulnerability into many critical systems around the world. The Log4j exposure should be a wake-up call to executives to better understand software reuse and how to mitigate the risk of using it in their organizations.

Software reuse originated as an efficiency measure within large software companies and was mostly an internal undertaking involving home-built proprietary components. The advent of the internet and the explosion of open-source software transformed the practice. Today, most software is at least partially built on functionality acquired through external software components. These components are often shared for everyone's benefit on open-source repositories, such as PyPI for Python, NPM for Node.js, and Maven Central Repository for Java, to name a few.

The main advantage for developers importing components from these repositories is that they do not have to assume ownership of the code or take responsibility for bug fixes or feature enhancements. Rather, they can concentrate on writing their own software while benefiting from the work of other teams of software developers. In addition, it is easier to import an entire package than to cherry-pick specific lines of code that will usually then need to be modified to fit into one's own source code. A package is self-contained and built as a turnkey solution for reuse that can be treated like a black box by developers. Manually cherry-picking specific lines of code means having to wade through a package's source code and identifying, copying, or reproducing parts of that source code, which is more time-consuming.

Taking Stock of Reuse at Scale

It can be difficult for business leaders to comprehend the extent to which reuse has become ingrained in software development practices. To illustrate its

pervasiveness, consider that Lodash, one of the most popular open-source JavaScript packages available on the NPM repository, was downloaded more than 2 billion times in 2021 (that's more than 40 million times per week on average) and that more than 149,000 other packages published on NPM depend on it to function. Chalk, another popular package, was downloaded more than 5 billion times in 2021, and more than 77,000 packages published on NPM depend on it.

Some researchers argue that writing software is now often more about writing "glue code" to tie in pieces of existing software components than writing entirely new sets of instructions or algorithms.[2] The authors of a recent study of the practice observed that "the software industry is undergoing a paradigm shift. Unlike in the past, when software reuse was just an anomaly, reuse is now becoming the norm for any significant software-development projects" — a sentiment shared by many.[3]

To grasp the scale of this phenomenon, consider that for every software component a team chooses to reuse, there is a high chance that this component itself depends on other software components that also have their own dependencies. (See "Software Reuse Dependencies in Principle — and in Practice," p. 64.) What this means is that when a developer imports a single component — also known as a dependency, in this context — dozens of other dependencies might be brought in at the same time, contained within that single component like Russian *matryoshka* dolls. As a result, a large software project might indirectly depend on thousands of other components created and maintained by as many teams of developers, each with its own interests, objectives, and agendas.

In the case of Log4j, its developers reacted swiftly to the vulnerability disclosure, and a new version of the framework was made available for download within days. This is a testament to the open-source community's ability to move quickly when problems arise. However, the real issue for many thousands of organizations was that it then became the responsibility of all those who used a vulnerable version of Log4j in their software to upgrade with a patched version and manage incident resolution with their customers. While Log4Shell is no doubt an extreme illustration of the phenomenon, reports frequently crop up on the discovery of issues in popular packages, or problems stemming from organizations' use of low-quality or outdated software packages to produce their own software.[4] In some instances, these issues are found to affect millions of connected devices that cannot be easily upgraded.[5]

Despite these undesirable outcomes, organizations have so much to gain from reuse that it is bound to play a role in software development practice. At the same time, business leaders should be aware of the implications of software reuse, even if they are not in the business of developing software.

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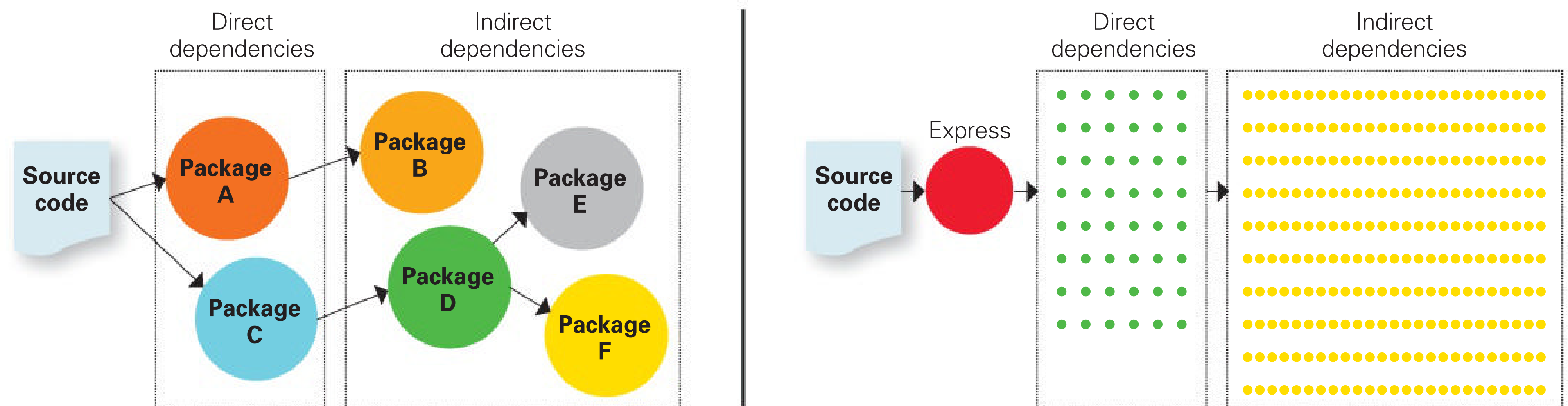
SOFTWARE REUSE DEPENDENCIES IN PRINCIPLE — AND IN PRACTICE

The diagram on the left illustrates the direct and indirect dependencies created by software reuse; the diagram on the right shows a real-world example of the extent of such a network of dependencies for the Express web development framework. Express depends directly on 48 other packages, which in turn depend on a total of 250 additional packages.



NOTE: The data on technical dependencies for Express version 4.17.2 was retrieved using npm-remote-ls. Express is published in the NPM repository.

Here are four key insights for leaders as they consider ways to manage the risks:

Consider the consequences. Software reuse may boost productivity in the short term, but it can have long-term consequences. For example, if there is a bug in an external component, your organization will have to wait until that bug is fixed to redeploy its own software. Some open-source projects benefit from an engaged, active community of developers, as is the case with Log4j. But it is also possible for the community supporting the development of a component to lose interest. Key developers may move on to other projects. And if development of a component stagnates, your developers might be left to deal with an outdated package.

When evaluating the fitness of a component for reuse, your development team should be looking beyond immediate functional needs. They should do some due diligence on the community or the organization (including your own) supporting the project, its responsiveness to bugs or feature requests, and its overall track record, in order to determine whether your organization will still be able to count on that component well into the future.

Look beyond direct dependencies. If the default practice in your organization is to systematically look for reusable software components to implement functionality, it is likely that your software is dependent on hundreds, if not thousands, of external components. It's important to look beyond direct dependencies to evaluate the indirect dependencies that are the consequence of a particular reuse decision.

In some instances, it will be worth taking on the risks of acquiring indirect dependencies, because the functionality gained will help achieve project goals. But sometimes a single piece of functionality depends on dozens of other external components. In those cases, it may be best to reimplement the portion of the functionality you want to acquire and, if needed, cherry-pick a few select external components to help you along the way. While this can involve more upfront work and can feel like reinventing the wheel, sometimes it is the most sensible decision, from both a business and a technical standpoint. Your organization's reuse decision process should include a careful assessment of the need for specific functionality in light of the indirect dependencies it brings with it.

Periodically review components in use. Decisions to include external components in software should be revisited regularly as part of the good practice of paying down technical debt (defined as the cost of past decisions to choose an expedient solution over the best solution). Software teams are often encouraged to engage in refactoring, a practice wherein source code is reorganized to reduce technical debt accumulated in the form of earlier coding shortcuts and workarounds, so as to improve future developer productivity and make the code easier to

maintain. Unfortunately, code refactoring usually considers only internal source code, because that is what teams can control and alter easily.

When your team writes code, they sometimes upgrade external components. Over time, it can become a reflex: If a component has served the organization well for months, by default the team trusts that the latest version can be safely used, and they continue to build around that component, even if that means having to implement or keep workarounds in order to do so. Unfortunately, this can contribute to increased technical debt over time. Refactoring offers an opportunity for teams to reconsider whether they still want to depend on an external component. It's important to keep abreast of a component's development and its road map, including monitoring it for potential issues and vulnerabilities over time, to ensure that it continues to be a good fit for your needs. During refactoring initiatives, careful consideration of external components can contribute to reduce technical debt and minimize the buildup of software bloat that can hinder software quality and developer productivity.[6]

Know what software your organization relies on. It may sound simplistic, but knowing what software your organization runs, especially operationally critical software, is important beyond the requirements of IT audits. The discovery of Log4Shell led to the shutdown of the Canada Revenue Agency's services; in the province of Quebec alone, more than 4,000 government websites were shut down as a preventive measure.[7] Agencies and organizations were forced to suspend access to systems while they inventoried their software to assess whether they were actually affected by the vulnerability. Log4j is so pervasive that organizations that had Java applications running could probably assume that Log4j was being used somewhere and might require patching.

When it comes to commercial software, such an issue should be handled by your software providers. However, it's important to ensure that when you select vendors, you are confident that they will be responsive to issues that occur in their products, whether linked to their own source code or to software components they reuse. Ask vendors to demonstrate that they have good governance over reuse decisions, including properly vetting software for quality and meeting licensing requirements to reuse open-source software. Your organization needs to trust not only the software provider but also the many other teams of far-flung developers that their code relies on.

SENIOR EXECUTIVES increasingly recognize that digital resilience is an existential issue for their organizations. It's incumbent upon leaders to understand the risks inherent in both modern software development practices and packaged software acquisition decisions, and to ensure that their technology function has good processes in place to manage those risks. While software reuse is critical to the accelerated pace of digital innovation, it has the potential to cause widespread, unanticipated, and damaging consequences. Ensuring that the practice is managed carefully and considers both short- and long-term implications can mitigate the risk that is inextricable from the benefits.

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Mastering Innovation's Toughest Trade-Offs

Leaders must answer eight key questions to address the hidden tensions underlying innovation strategies.

BY CHRISTOPHER B. BINGHAM AND RORY M. MCDONALD

Innovation is frustratingly hit-or-miss. More than 90% of high-potential ventures fail to meet projected targets, while roughly 75% of the products released each year bomb.[1] Few established organizations remain dominant over time, as revitalization efforts fail or backfire, costing companies time and money and creating openings for competitors; even fewer generate above-average shareholder returns for more than a couple of years.

These failures are often attributed to a lack of money, talent, or luck. But we think the underlying cause is that innovation in dynamic environments — those characterized by novelty, resource constraints, and uncertainty — is rife with critical tensions. When left unaddressed or mishandled, these tensions sink teams and organizations. Until now, there has been little focus on these tensions in practice or theory, leaving leaders blind to their existence and without the rigorous approaches needed to successfully manage them.

To address this, we conducted hundreds of interviews at organizations in diverse industries on five continents and surfaced eight questions that every innovation leader must be able to answer correctly. We'll discuss each in turn and provide practical guidance for harnessing the tension that underlies each question.

DAN PAGE/THEISPOT.COM

1 Should you be flexible or disciplined when capturing growth opportunities?

A small, U.S.-based security software company received a call from a customer prospect in Germany. To capture the business and meet cash demands, the company chose to enter the German market. It subsequently entered additional overseas markets in a similar manner. "It was more like we were drawn in rather than made a conscious decision," a company executive told us.

Seizing opportunities as they arise is consistent with the conventional wisdom that companies must move quickly in dynamic markets. But there is an underlying tension here. Acting fast leaves less time for deliberation, so companies can easily end up with an incoherent portfolio of mismatched opportunities. A disciplined approach, in contrast, enables strategic alignment and sets a path for future opportunities, but it can come at the cost of some quick wins.

Our research with successful organizations shows how to resolve the tension. During the *opportunity selection* phase, it's better to be *disciplined* — spending time studying prospects and devising a plan to capture the best ones rather than those that are easiest to attain. In this way, an organization can accumulate knowledge and experience, using early opportunities to build a foundation for more strategic ones later on. During the *opportunity execution* phase, more flexibility leads to greater success. This helps organizations abandon ineffective products and practices and adopt more appropriate ones.

Increased discipline in opportunity selection creates a foundation for increased flexibility during execution. That's because more discipline in selection usually reduces the need to rationalize faulty choices later, freeing leaders to approach execution in a more open-minded way.[2] Conversely, when leaders take opportunities as they arise, they exhibit a strong tendency to defend their past choices and become more rigid in the way they execute opportunities.

A Singapore gaming company offers a good example of being disciplined first and flexible later. The company took its time conducting customer interviews and studying market adoption trends before choosing Japan as the first market to enter in its global expansion. When it executed this opportunity, however, it quickly discovered that its plan to sell digital content to Japanese wireless providers meant going head-to-head with entrenched Japanese companies. Once managers realized this, they changed their plan and instead partnered with the entrenched competitors in Japan to sell their content throughout Asia. Their flexibility yielded far greater results than the original execution plan would have.

2 Is it better to differentiate your offering or borrow ideas from competitors?

In established markets, the essence of strategy is choosing to perform activities differently from the way rivals do. In nascent markets, however, this approach makes little sense. When a market (or a business category) is still forming, leaders often don't know who their buyers, suppliers, or competitors will be, much less which points of distinctiveness are likely to matter most to customers.

The tension underlying this dilemma is rooted in the choice between developing a well-differentiated offering or borrowing ideas that work from competitors. The trade-offs are straightforward. Borrowing is faster and often cheaper and easier, but it doesn't result in a unique offering. Going for differentiation sets a new product or service apart, but it is time-consuming and resource intensive, and customer demand is uncertain.

Leaders can resolve this tension by engaging in *parallel play*, a practice inspired by preschool-age children.[3] Here's how parallel play unfolds in various stages of innovation.

Early on, put aside differentiation. Borrow ideas instead. Young children playing side by side imitate one another and borrow one another's toys, but they rarely play together or try to outdo one another. A similar dynamic occurred in the early days of the ride-sharing market: When Sidecar switched to letting drivers use their own cars and offered an app that featured electronic payments, GPS navigation, and driver ratings, Zimride (later renamed Lyft) and Uber followed suit.

Next, test relentlessly — and then commit.[4] When young children play, they usually explore various projects and then stick with the one that engages them most. Similarly, we found that high-performing organizations don't just borrow ideas — they test ideas and learn from market feedback. Then they use that learning to develop a lucrative business model for creating and capturing value and spend their scarce resources only on that strategy. Burbn is a good example. When an early version of the app, which enabled users to connect, arrange meetups, and post photos, proved too complicated for users, founder Kevin Systrom investigated what they really wanted.[5] What he

THE RESEARCH

The authors conducted hundreds of in-depth interviews with senior executives (CEOs, board chairs, executive vice presidents, and business unit heads) and innovation managers across different industries and settings.

They supplemented interview data with email correspondence, site visits, research gathered at industry events, and archival data from websites, blogs, social network profiles, and trade publications.

They then followed an inductive approach to iteratively organize and reorganize the raw data to generate theories linking actions to outcomes.

discovered led to a new business focused solely on easy photo sharing, named Instagram.

Finally, pause, observe, and refine. Often, preschoolers at play pause to reflect on their projects before continuing. Leaders we studied acted similarly by initially specifying basic elements of their business models (a product that customers will find superior to existing solutions) while leaving other elements undefined (such as distribution). Early on, Dropbox committed to providing an easy-to-use product and a free-to-paid tiered model for capturing value.[6] But it stopped short of tailoring the offer to consumers, who were Dropbox's primary users at the time, and building operations around file backup, which was the service's original and most common use. This robust but undetermined model enabled Dropbox to add additional services, such as file sharing and collaboration, and led to profitable new enterprise customers. By the time it filed to go public in 2018, almost a third of its 11 million subscribers were on a Dropbox Business team plan.[7]

3 Do you follow what data is telling you, or ignore it?

This is a golden age of data, in which new capabilities driven by data analytics promise to turbocharge companies' disruptive potential. But some innovation leaders overly defer to data and wind up with a culture in which other legitimate decision-making methods — logic, intuition, and qualitative insights — take a back seat. Other leaders appreciate that pathbreaking innovations are inherently contrarian and that evaluating them requires nuance and interpretation. These innovators sometimes ignore data altogether. Resolving this tension between making data-driven decisions and relying on intuition requires knowing when to take which approach.

Our research suggests that you should lean on data when making incremental improvements to existing innovations for current customers but view it more skeptically when transforming products and services in the face of disruption or when introducing breakthrough offerings. Netflix, renowned for its data-driven decision-making, had one of its biggest hits ever when it ignored the data showing that '80s nostalgia fared poorly, as did programs featuring kids and actress Winona Ryder, and produced the award-winning series *Stranger Things* anyway.

Leaders can protect potentially disruptive and new-to-the-world innovations by adopting a discerning orientation toward data and a healthy skepticism about insights derived from data. For instance, while Netflix executives use data to inform their decisions when green-lighting programming, they don't use it as their sole criterion. "You have to be very cautious not to get caught in the math, because you'll end up making the same thing over and over again," said Netflix chief content officer Ted Sarandos. "And the data just tells you what happened in the past. It doesn't tell you anything that will happen in the future."[8]

Such caution ensures that leaders don't rely on data drawn from existing products in established markets to evaluate unrelated innovations aimed at new markets. When Steve Jobs introduced the Macintosh computer, for instance, he leaned on his theory of technology, not numbers. (In the early 1980s, there was no data suggesting that there was an overwhelming unmet demand for desktop computers.) This also prevents innovations from withering on the vine due to unrealistic performance expectations.

4 When do you seek internal help or external help?

Innovators need other people's help. Alone, leaders are subject to information-processing

Lean on data when making incremental improvements to existing innovations for current customers but view it more skeptically when transforming products and services in the face of disruption or when introducing breakthrough offerings.

Using crowds — or the people around us — is an effective way to overcome the inherent limitations of individual cognitive processing, particularly in entrepreneurial settings, where leaders must make swift decisions.

limitations. Their information is incomplete, and what they know is affected by cognitive bias. Left unaddressed, these shortcomings can result in poor outcomes for individuals, teams, and organizations. Using crowds — or the people around us — is an effective way to overcome the inherent limitations of individual cognitive processing, particularly in entrepreneurial settings where leaders must make swift decisions to address the key uncertainties associated with innovation. But when should leaders seek the advice of crowds inside the organization, and when should they seek the advice of crowds outside it?

The key to resolving this tension is understanding when and how to source internal and external crowds, using a novel strategic framework we call crowd sequencing. Crowd sequencing consists of three steps.

First, use external crowds to address problem uncertainty. Leaders are constantly bombarded with issues, all of which seem to require attention and resources. But often, leaders have an incomplete or inaccurate picture of what's going on, such that it is difficult to know whether they are focusing on the right problems. They typically rely on focus groups of knowledgeable consumers to overcome this, but our research shows that an unfocused array of people better helps expose leaders' unknown unknowns. Tapping into a greater diversity of input by sourcing knowledge from a crowd consisting of many outsiders with diverse backgrounds helps leaders find the right problems.[9]

Second, use external crowds to address demand uncertainty — that is, to determine whether you've found the right solution to a problem. A good way to resolve demand uncertainty is to source knowledge from crowds consisting of extreme customers — people outside the organization who would intensely use your product or service and be most likely to recommend it to others, as well as those who would use it rarely, if at all. The heightened sensitivities of extreme users help leaders recognize and better connect with customer needs, beliefs, and desires.

Honda did this when designing its Ridgeline pickup truck. Engineers questioned two types of extreme users: pickup truck lovers, specifically, people who ran businesses out of them, such as electricians and landscapers; and occasional users, such as people who used their trucks only at weekend tailgate parties. From the truck lovers, the engineers discovered a general dislike for traditional tailgates. These customers wanted a tailgate that swung out and could detach to make cargo loading easier. From the weekend tailgaters, the engineers learned that a built-in ice cooler and an electrical outlet (to plug in a TV or mixer) would come in handy. These ideas helped transform a good pickup truck into one of the most popular midsize trucks in the U.S.

Third, use internal crowds to address *supply uncertainty*. By supply uncertainty, we mean that even after you've figured out what people want, you might not have the knowledge necessary to execute. Executing a new solution typically means solving a series of new problems that call for bits and pieces of know-how from varied sources. Though leaders often turn to their closest associates for ideas and expertise, a better approach is to source knowledge from people inside the organization whom they barely know — individuals Mark Granovetter has characterized as "weak ties."[10] Established teams are liable to revert to the same old approaches. When seeking the kinds of novel solutions that executing a new product or service tends to require, it makes more sense to look beyond your usual networks and tap people in other departments or business units.

Rules of thumb provide efficiency in decision-making and problem-solving by restricting the scope of possible solutions. At the same time, they enable flexibility by not specifying the details of the solution.

5 How do you mature a business without making it sluggish and bureaucratic?

As organizations grow, leaders impose order and increase efficiency by adding levels of management, policies, and procedures. But over time, adding structure increases complexity, which makes organizations more bureaucratic and less flexible. How can leaders balance the tension between efficiency and flexibility?

One way to address this tension is to employ heuristics, or simple rules of thumb. Heuristics often get a bad rap. Research suggests that they might lead people to neglect or misinterpret important critical information and thus result in low performance. But our analysis found that heuristics can be a key to high performance.[11]

Rules of thumb provide efficiency in decision-making and problem-solving by restricting the scope of possible solutions. At the same time, they enable flexibility by not specifying the details of the solution. Amazon's "two-pizza teams" rule is a good example: If two pizzas aren't enough to feed a team, according to CEO Jeff Bezos, the team is too big. This simple rule is efficient because it's easy to remember and apply. It's flexible because it doesn't dictate things like who should be on the team, what team members should talk about, or for how long.

Rules of thumb come in different varieties. Selection heuristics help managers cope with an abundance of choice by constraining the range of opportunities they consider. *Procedure heuristics* can guide growth-pursuing processes, such as deciding how to enter new countries, partner, acquire, or pursue product development, thus speeding action, conserving attention, and improving the reliability of opportunity capture. Priority heuristics help leaders avoid acceptable but lower-value opportunities in favor of higher-value alternatives. Timing heuristics help specify a sequence or a pace for opportunity capture that can be advantageous.[12]

One last point: Be aware that rules that proved useful initially can become outdated. Heuristics should routinely be reviewed and pruned so they don't create a bureaucracy of their own.

6 How do you make new-to-world innovations comfortably familiar while still distinct?

Novelty sells, but if products and services are perceived as too alien, customers might reject them. Thus, there is a delicate balance between novelty and familiarity, and when to stress one or the other is a tension every innovator must master.

To manage this tension, innovators should begin by stressing the similarities to existing products and services when introducing their own. While highlighting what's novel may work in established arenas where competitors try to one-up each other, it's less effective when introducing something new to the world. When a new product or technology gains a foothold, however, leaders should shift to emphasizing novelty. Once barriers to adoption have been toppled, leaders will be ready to focus on the features that distinguish it from its predecessors and competitors.

Amazon and Barnes & Noble followed this sequence when introducing e-readers. First, they emphasized how the Kindle and Nook, respectively, were similar to traditional books, with features like next-page buttons and animations that simulated a book page being turned. Later, they highlighted how e-readers were unique, by drawing attention to features such as digital bookmarks, scrolling, and embedded dictionaries, which traditional books lack.[13]

7 Do you spend money on promoting your brand, or solving someone's problem?

Say you launch an innovation and spend lots of

money following the classic marketing playbook only to have it flop in the marketplace. Should you have focused your efforts on advertising the brand's features and running sales promotions, or on how your innovation can help customers solve a particular problem perfectly?

Well-designed *purpose brands* — which we define as brands that are inextricably linked to a particular job to be done — can sell themselves, enable premium pricing, and lock out competitors.[14] But far more new brands fail than succeed, because innovators spend more time thinking about their brand than thinking about the problems that customers face and how the brand aligns with the solutions they crave.

Gojo Industries shows how a relentless focus on the job to be done can pay off. Gojo was founded during World War II, after Goldie Lippman, a rubber plant worker in Akron, Ohio, couldn't get her hands clean without chafing or burning them. Her husband, Jerry, with the help of a local professor, invented a hand cleanser to get the job done. Customers liked the product but found it too expensive, and Jerry soon figured out why: They were using more of the cleanser than necessary. So he invented (and patented) the first portion-control hand-cleaner dispenser, again focusing less on promotion or product and more on a job to be done. Decades later, when Gojo discovered that its customers needed to sanitize their hands more than remove grease and grime, it once again focused on the job to be done. The company invented Purell, which, combined with its touch-free and countermount dispensing systems, became ubiquitous during the COVID-19 pandemic.

8 How do you keep supporters who have bought into one vision on board when you change course?

Launching an ambitious new venture requires enormous support. Much of that support comes from selling investors, new employees, the media, and others on a visionary story and a promising strategic plan. But often, when vision and strategy meet reality, leaders find that they must pivot to a new plan. Such moves are filled with tension as leaders struggle to communicate the shift to stakeholders who bought into the initial plan. It pits consistency against change, and this is where many organizations falter.

Our research has identified a set of tactics for maintaining stakeholder support during strategic pivots.[15] Early on, leaders should avoid communicating specific solutions in favor of a compelling and visionary but general rallying cry. Successful innovation leaders communicate by means of emotional appeals that underscore a larger aim. They promise to reach a destination and resist the urge to be precise about features or functionality: Microsoft is modernizing the workspace, LinkedIn is connecting the world's professionals to make them more productive and successful, and Patagonia is in business to save the planet. Big abstract ideas encourage audiences to see what they want to see and offer more wiggle room if a pivot is needed.

If a course correction is necessary, leaders should signal continuity by explaining how the new plan ties to the original vision. People value consistency. Our analysis of media coverage and feedback from customers, partners, and investors shows that audiences view inconsistent organizations as less legitimate and ultimately less deserving of their support. But they're also less likely to register a deviation as significant if it seems aligned with previously articulated aims.

The link between the new strategic direction and the initial pitch isn't always obvious, however. To maintain credibility and avoid being penalized, leaders need to make the connection explicit. This is what Steph Korey and Jen Rubio, cofounders of the luggage startup Away, did after realizing their first suitcases wouldn't be ready for sale before Christmas as hoped. Instead, they decided to produce a coffee table travel book that came with a gift card redeemable for a bag the next year. This major departure from their plan could easily have unnerved supporters. But the founders argued that while luggage was key to reaching their higher-level goal of building a travel and lifestyle brand, the book fit, too. Investors were convinced. Media outlets ran holiday gift-buying features about a suitcase that didn't yet exist. Within a few weeks, 2,000 books — and bags — had been sold.[16]

Once the pivot has taken place, leaders should

be conciliatory and empathetic to stakeholders who might feel abandoned. Employees and customers are more likely to remain loyal if leaders act like they care about their plight and offer clear guidance about how the change will affect everyone. All too often, though, leaders are afraid of showing weakness or losing stakeholders amid a reboot, so they make the change without apologizing or admitting that they were wrong. Instead of preparing audiences for a change, they spring it on them. Only when stakeholders react do they apologize. By then it's too late, and they're on the defensive.

INNOVATION IS NEVER EASY, but leaders who can thoughtfully consider the questions we've posed and manage the tensions embedded within them can tackle some of innovation's toughest trade-offs and significantly improve the odds of success for their organizations. The key to this endeavor is to transform the tensions from reductive to productive — to make them something that can help and be harnessed as leaders seek new opportunities for growth and innovation.

Our message isn't to work harder; the leaders we've met are already exceptionally hardworking. It's to work smarter by addressing innovation's inevitable tensions in the right way: by anticipating the tensions that will arise and facing them head-on, thus reducing the risk of having to halt innovation efforts, and better positioning the organization to overcome crippling complications.

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Break the Link Between Pay and Motivation

An experiment in eliminating a pay-for-performance model bolstered sales force results, retention, and engagement at Hilti Group.

BY JONAS SOLBACH, KLAUS MÖLLER, AND FRANZ WIRNSPERGER

Pay-for-performance (PFP) compensation systems were invented in the industrial age to drive individual performance — and despite research showing that this approach is ill suited to much of the knowledge work performed in organizations today, the practice persists as the norm.[1]

Compensation systems remain stuck in the past for several reasons. The first is, essentially, inertia: Companies have been using PFP for decades, and the best practices disseminated by compensation consultants usually derive from it. Additionally, most leaders are either not aware of the research on PFP or dismiss it as unreliable. Finally, leaving PFP behind and taking the leap required to design and implement a new compensation system can be a fearful prospect, given the potential impact on performance and results as a consequence of getting it wrong.

However, organizations may have more to lose by failing to move beyond PFP. We conducted a large-scale experiment with a target-independent compensation system. The results point to a strong business case for leaving PFP behind.

The Dysfunctional Elements of PFP

For the past 50 years, academics such as Edward L. Deci and Jeffrey Pfeffer, and pundits such as Alfie Kohn and Daniel H. Pink, have been arguing that PFP is inherently dysfunctional.[2] This stems from two primary sources.

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THE RESEARCH

The authors reviewed the literature of pay-for-performance (PFP) compensation systems over the past 50 years to understand their dysfunctional elements. They ran an experiment in which they replaced a PFP compensation system with a target-independent system in the direct sales force of a country organization of Hilti Group.

The authors analyzed the results of the new system using performance data, surveys, and qualitative interviews with salespeople and the management team.

First, PFP is focused on narrowly defined outcomes, such as the number of sales closed, but it ignores the ways in which those outcomes are produced. This introduces the possibility that chance — or, worse, unethical behavior — will be rewarded and that the quest to achieve the promised reward will undermine other desirable behaviors, such as teamwork and collaboration.

Second, PFP provides the extrinsic motivation of financial reward, but it ignores powerful and beneficial intrinsic motivators, such as the joy of the task itself, a sense of contributing and belonging to a team, and personal development. (See "Shifting Thinking on Motivation and Compensation.") Financial rewards prompt employees to pursue specific targets and avoid activities that do not lead directly to achieving those goals. PFP suppresses intrinsic motivation, leading at best to compliance — and it fails to nurture an enduring employee commitment to or identification with the company. In the long run, this lowers overall performance.

For all of the dysfunctions it can generate, PFP has its uses. It can drive superior performance when jobs offer little or no opportunity for intrinsic motivation. When jobs are monotonously simple or volume-driven, extrinsic motivation provides a focal point for employee effort and behavior.[3] But PFP undermines the performance of work that requires people to explore complex problems, develop creative solutions, and achieve qualitative results that cannot be fully specified in advance.[4] Moreover, when performance targets become obsolete, such as when production lines shut down and sales crashed during the initial round of COVID-19 lockdowns, PFP loses its motivational power because it cannot deliver the rewards that it promised.

Seeking Alternatives to Pay-for-Performance at Hilti

Leaders at Liechtenstein-based Hilti Group, which offers products and services to the construction industry, have had their own misgivings about the effectiveness of PFP and whether its focus on individual performance is out of step with the company's collaborative culture.

The family-owned company employs more than 30,000 people, 70% of whom sell its products and services directly to contractors on construction sites in 120 countries. Hilti has a decentralized structure, and the country organizations maintain their own sales forces. As the range and complexity of the company's portfolio of products and services have grown, so has the challenge for its salespeople. Initially, they simply offered the company's products to as many contractors as possible within their assigned territories. But as Hilti fully penetrated its sales territories, continued growth demanded that the company win a greater share of contractor wallets. To that end, the company increased customization and added new digital solutions, but those moves also led to more complex sales, longer sales cycles, and a solution-based selling approach. Today, Hilti's salespeople are more akin to consultants. Often, they specialize in the needs of specific industries and collaborate with colleagues, field engineers, customer service personnel, and team leaders to satisfy customer needs.

Sales compensation at Hilti has been based on a pay-for-performance system that is tailored, within centrally established guidelines, to local needs. But PFP's focus on individual sales performance and volume is increasingly out of step with the company's strategy and culture. Accordingly, in 2018 Hilti's management asked us to propose and test a new sales compensation system that would be better aligned to its needs.

We reviewed the company's market organizations globally and identified a country organization in Eastern Europe that was well suited to the rigorous study of an intervention involving a new compensation system. At the time, the country organization's 190 salespeople received 65% of their salary in fixed compensation and 35% in variable compensation, on average. But there were problems with this system.

Management was investing a significant amount of time and energy in setting compensation targets that were both fair and motivational. Longer sales cycles and the team effort required to close deals made it difficult to attribute sales to individual salespeople. Moreover, the questions of when and how to adjust the targets were frequently debated and contested. Despite management's efforts to address these problems using various formulas, setting targets for bonuses posed a chronic challenge that frequently resulted in dissatisfaction within the sales force.

The compensation system had also become too complex due to management's efforts to use it to

SHIFTING THINKING ON MOTIVATION AND COMPENSATION

Extrinsic motivation is rooted in agency theory, which assumes that each of us acts in rational and predictable ways to maximize our personal satisfaction or benefit. In this view, work effort is a cost that is avoided when possible. Thus, employees (agents) try to minimize work effort, while employers (principals) try to maximize work effort.

Compensation contracts and controls are the only ways to align these conflicting goals.[i] Alfie Kohn has described this as bribing employees to do their jobs.[ii]

Contemporary theories of human behavior, such as self-determination theory, stress an additional factor that spurs employee performance: intrinsic motivation.[iii] This theory, which was introduced by Edward Deci and Richard Ryan in the early 1980s, views motivation as a continuum that ranges from intrinsic (or autonomous) to extrinsic (or controlled). The degree to which employees' needs for autonomy, competence, and relatedness are met determine the degree to which motivation falls on the intrinsic end of the continuum.[iv]

Intrinsically motivated employees work because they enjoy it. They can deliver superior results because they are able to manage themselves and are aware of how their work relates to the strategy and higher purpose of their work group and company.

drive an ever-increasing number of organizational priorities. Many salespeople did not understand their compensation payout or what actions it was meant to incentivize, rendering the entire system ineffective as a motivational tool.

Another issue was that salespeople were turning to tactical behaviors to close the sales needed to earn their monthly bonuses. These behaviors diluted the organization's sales strategy, which was aimed at investing the time needed to establish and nurture long-term, value-based customer relationships.

And finally, salespeople were unhappy with the variability in their compensation. Long sales cycles caused a high degree of fluctuation in monthly sales compensation, which sometimes left salespeople unable to meet their living expenses.

A New Compensation System

On Jan. 1, 2019, the country organization selected for the experiment launched a new sales compensation system that did not link rewards to preset targets.[5] Under the new system, the pool for fixed sales compensation increased to 97% of the average total payout for the entire sales force in the previous two years. Individually, salespeople receive a like percentage in fixed salary, with small variations based on tenure and performance. This change was intended to signal greater trust in salespeople; to better support the stretch targets, operations, and practices necessary to exploit the full potential of a sales territory; and to encourage knowledge sharing and long-term strategic behaviors.

The new compensation system also expanded the existing structure for advancement for salespeople from three levels to seven levels based on tenure and performance to give them a longer-term career path.

Additionally, the country organization extended the use of gamelike competitions from individual salespeople to sales teams. These quarterly competitions, which were funded with the remaining 3% of the overall sales compensation pool, featured nonmonetary rewards, such as vouchers for family dinners and amusement parks.

To evaluate the results produced by the new target-independent compensation system, we conducted four online surveys of the sales force over 17 months (starting with a baseline survey before the new system was announced) and interviewed salespeople and their managers. We also used company records to track each employee's sales data and results and their top- and bottom-line financial impact; employee turnover; and employee satisfaction scores. We recorded the following results.

Enhanced sales results. Initially, sales results under the new system gave us pause. In 2018, the last year under the old PFP system, net sales growth was 14.4%; in 2019, under the new target-independent system, net sales growth slowed to 11.1%. But these numbers did not account for the country's construction market, which is highly cyclical and began to slow in 2019. When we compared sales growth in relation to market growth, we discovered that the country organization outperformed the market by a factor of 1.4 in 2019 — fully twice the rate of 2018.

Additionally, when we analyzed the sales results of the most extrinsically motivated salespeople, as identified in our four surveys, they still outperformed the average net sales growth rate of the organization. This allayed concerns that the performance of salespeople who were most motivated by performance bonuses would falter under the new compensation system.

Lower turnover. Despite a tight labor market, turnover within the sales force decreased by more than 4% under the new pay scheme in 2019 compared with turnover in 2018 under the PFP system.

Higher employee satisfaction. The entire country organization reported significant improvements in its annual employee satisfaction scores in 2019, which were higher than in the previous five years. While this result is likely attributable to a combination of efforts, there was a uniform and significantly disproportionate improvement in satisfaction with compensation and recognition within the sales force. Satisfaction with compensation within the sales force increased by 19%, compared with a 9% increase across the entire workforce in the annual scores.

Additionally, our surveys found that the perception of compensation fairness within the sales force increased significantly. From 2018 to 2020, the perception of fairness among salespeople increased by 15%.

Greater work effort. Fears that the new compensation system would result in a slackening of sales effort did not materialize. Our surveys recorded a linear increase in self-reported work effort of 7% from 2018 to 2020. Perceptions of coworker loafing rose by only 2% over the same period.

Based on the above results, the country leadership team became convinced that the target-independent compensation system was outperforming the PFP system. In 2021, the team made a modification to the system by replacing the nonmonetary awards in the team competition with monetary rewards, believing that bolstering competition in this way would not result in negative outcomes or hinder collaboration.

Meanwhile, several other country organizations within Hilti introduced their own target-independent compensation systems. At the corporate level, Hilti's leaders are revising the global guidelines on compensation, and the Hilti Lab for Integrated Performance Management at the University of St. Gallen has launched a follow-up project to determine whether the results are transferable across cultures and contexts and to further measure the impact of target-independent pay on sales force productivity.

THE IMPACT OF THE COVID-19 PANDEMIC

The onset of the COVID-19 pandemic in early 2020 and the business disruptions it caused enabled us to conduct a preliminary evaluation of a target-independent compensation system in extreme conditions. We found that although a significant increase in fixed compensation might be expected to reduce the compensation system's flexibility during a crisis (when declining sales would automatically lead to declining salaries in a PFP environment), this did not occur at Hilti. When we compared the financial results in the country organization using the target-independent system against those of other Hilti country organizations, we found that the opportunities for cost-cutting were comparable to country organizations in the region that were using PFP systems. Nor did the higher fixed-cost ratio of the target-independent system seem to have a material influence on the country organization's results.

One explanation for this may be that keeping salespeople engaged and motivated in the PFP countries required the country organizations to offer minimum guarantees of bonuses and engage in costly discussions on how to adapt their planning for the remainder of 2020, while the target-independent system did not need adjusting. "Our job was reduced to managing motivation," the target-independent organization's general manager told us. "The amount of management time saved was significant, because people's livelihoods were less impacted."

Further, the target-independent organization reported that following the initial uncertainty created by the pandemic, its salespeople were grateful for fixed salaries and were more willing to go the extra mile for the company. "We discussed taking back the changes we had made because of the crisis but very quickly concluded that the system change was actually an opportunity," explained one of the country organization's regional sales leaders. "At the moment, we are receiving a tremendous amount of extra engagement from our sales force."

Are You Ready to Jettison PFP?

Our research suggests that target-independent compensation systems can be superior to PFP systems in organizations that rely heavily on knowledge work and collaboration, under certain conditions.

First, the organization should have attained a certain level of cultural maturity as evidenced by employees' high levels of trust in leadership and the talent development process. The culture should also be performance-driven, with challenging goals and metrics that are used for performance accountability and improvement.

Second, a target-independent compensation system should incorporate several essential design choices. (See "Design Principles for a Target-Independent Compensation System.") Establishing the right level of fixed salary is a particularly crucial choice: It needs to be competitive in the market and convincingly signal management's trust in employees.

Third, the successful implementation of a new compensation system requires the full support of senior leaders, who must commit not only to making the instrumental changes but also to fully accepting the underlying behavioral assumptions regarding the desirability of intrinsic motivation. In addition, the new system must be aligned with all current programs and processes. For example, at Hilti, there was a special bonus plan in the summer that needed to be discontinued without thwarting the underlying need to bolster sales during vacation season.

Finally, management must communicate extensively to convey its trust in employees and its performance expectations. Without a bonus

DESIGN PRINCIPLES FOR A TARGET-INDEPENDENT COMPENSATION SYSTEM

Consider pay levels, team compensation, and recognition and rewards when designing a target-independent compensation system.

Recommendations	1. Increase and differentiate fixed pay levels	2. Include team compensation	3. Recognize and reward relative outperformance
Guiding Principles	• Decouple targets and pay • Use stretch targets to avoid short-termism • Avoid unethical behavior • Encourage a long-term view and strategic focus	• Reward team performance • Encourage collaboration and mutual support • Avoid egocentric behaviors	• Increase the visibility of top performers • Use gamification to temper competition • Create inspirational competition • Increase the perception of fairness • Avoid free-riding
Outcomes	• Reduction in managerial effort • Avoidance of sandbagging • Increase in intrinsic motivation and sales performance		

system to make performance expectations obvious, leaders have to pick up the slack.

The payoffs for these efforts are clear. At Hilti, a target-independent pay scheme bolstered intrinsic motivation, satisfaction with pay, and, ultimately, employee performance, without giving rise to free-riding, ugly competition, cost challenges, and layoffs in times of crisis. Intrinsic motivation seems to provide access to the vast untapped potential of employees, boosting both performance and well-being. Target-independent pay also serves as a lever to transform the focus of leaders from computational command-and-control to behavior-driven performance management. We believe that if your company does complex knowledge work, this is a compensation system that can pay off for you, too.

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Why Some CFOs Make Better M&A Deals

When chief financial officers have greater influence in the C-suite, companies are far less likely to destroy value by overpaying for acquisitions.

BY AYSE KARAEVLI AND SERDEN ÖZCAN

Despite the tremendous uncertainty and disruption caused by the persistent COVID-19 pandemic, global M&A volume exceeded $5 trillion for the first time in 2021, with many experts predicting that this current wave is only the beginning of a merger frenzy that could last for several years.[1] The abundance of capital and the ever-increasing pressures to grow more quickly, become larger, and digitalize are driving companies to close deals with over-the-top premiums.

Overpriced acquisitions are hardly a new phenomenon: In the past two decades, U.S. public companies have paid, on average, a 36% premium in excess of the prevailing market value of the target company prior to the news of the takeover. But in the current hot market for acquisitions, the risk of overpayment is significantly heightened — and, according to our research, that's a risk organizations might be able to mitigate by examining and changing power dynamics in the C-suite.

Numerous empirical studies have identified behavioral biases and misalignment between managerial and organizational interests as the main reasons companies overpay for acquisitions.[2] In particular, CEOs, who are typically the primary decision makers in acquisitions, are often overconfident about their deal-making prowess.[3] They tend to overestimate a target company's intrinsic value and realized synergies, and underestimate the execution and integration risks. In addition, corporate chiefs might have a personal interest in gaining power, prestige, and additional compensation through acquisitions rather than through other major capital expenditures. In many cases, their decisions are not monitored closely because they have outsize influence on the acquisition process and their companies' boards.

We hypothesized that the player ideally positioned to mitigate the risks of overpayment is a company's CFO. Besides their fiduciary duties and core responsibility

JIM FRAZIER/THEISPOT.COM

to monitor important financial decisions, they are also likely to have access to the same information as the CEO, unlike external directors, who might not be fully informed. But are companies with more powerful CFOs indeed less vulnerable to overpaying for acquisition targets?

To investigate this question, we analyzed 1,983 public company acquisitions made by 926 U.S. public companies between 1992 and 2019. Our findings support our main thesis that companies with more powerful CFOs pay smaller acquisition premiums. These findings complement the results of a recent study conducted in the U.K.[4] However, given that CEOs have outsize formal power and discretion in the U.S. corporate governance system, we thought it was important to look beyond the traditional sources of formal power (such as an executive's position in the C-suite hierarchy and/or having a seat on their company's board) to understand what makes CFOs influential in acquisition decisions.

We found that the CFOs of companies that pay lower premiums for acquisitions have one or more of the following characteristics: They possess generalist skills, they demonstrate independence from the CEO, and they enjoy high status in the organization. These characteristics appear to confer three informal sources of power that we refer to as *skill-based*, *relationship-based*, and *status-based* power. Our analysis found the following.

Generalist Skills

Companies employing CFOs with general management skills paid 9% lower premiums for acquisitions than did those with specialist CFOs. Unfortunately, many acquiring corporations in the U.S. lack a generalist CFO. Around 40% of CFOs in large acquiring companies could be characterized as specialists — that is, they have deep expertise in traditional finance functions, such as accounting, controlling, budgeting, audit, tax, and treasury.

Our analysis indicates that in response to the governance and compliance demands of the Sarbanes-Oxley Act of 2002, and a tighter focus on financial risk management in the wake of the 2008 financial crisis, acquiring U.S. companies started appointing specialist CFOs, usually from their internal ranks, at a higher rate than they appointed generalist CFOs.

In addition to having an in-depth understanding of finance typically gained via higher education and early work experience, a generalist CFO has extensive experience in nonfinance roles and/or contexts, such as in different organizations, industries, or countries.[5] Charles Holley, retired CFO of Walmart, and Tracy Travis, CFO of Estée Lauder, are two vivid examples of generalist CFOs.

Holley, who started his career as an accountant, gained significant business experience at Tandy, a retail and consumer electronics conglomerate. There, he served as a director of finance for its international operations, with responsibilities in managing greenfield startups, negotiating overseas joint ventures, and doing business abroad. His next position as the managing director in Europe provided him with operational experience running a company. According to Holley, his skills in finance, operations, and international business and his portfolio of experience prepared him well for his leadership roles in finance at Walmart.[6]

Travis has taken a similar approach to her career and has highlighted the importance of having a wide range of experiences to broaden her skill sets, particularly early in her career. She has also noted that all of her positions at five different companies in different industries gave her the opportunity to contribute to strategy.[7]

THE RESEARCH

We conducted a large-scale empirical investigation to answer the following question: Which sources of CFO power enable companies to pay lower acquisition premiums?

Our sample included 1,983 acquisition deals that were conducted by 926 U.S. public companies between 1992 and 2019 and recorded in the Securities Data Company Platinum database. The acquisition premium was calculated as the acquisition price per share divided by the target firm's closing market price on the day before the acquisition announcement.

We operationalized the sources of the CFO's power using established measures in the literature.[i] We assessed the CFO's formal power based on whether they had a board seat and were the highest-ranking executive in the company after the CEO. We assessed their informal power based on *skills* (generalist or specialist), *relationship* to CEO (whether the CFO was appointed by the CEO or was independent of them), and *status* relative to the CEO (based on the CFO-to-CEO total compensation ratio).[ii]

We controlled for a broad array of strategic, performance, and deal-related factors, as well as for the CEO's power and demographic characteristics and the CFO's demographic characteristics. Since acquisitions do not happen randomly and corporations do not randomly employ powerful CFOs, our models include two correction terms to account for both selections.

Both executives have explicitly attributed their effective relationships with the boards and CEOs of their respective companies to their in-depth understanding of their company's strategy and operations, which they gained through their generalist skills.

Independence

The premiums companies paid for acquisitions were 18% lower when they had an independent CFO (that is, when the CFO was not appointed by the incumbent CEO). Nonetheless, 61% of CFOs were appointed by the incumbent CEO.

The CEO-CFO relationship is certainly complex and requires close collaboration between the two executives. It's understandable that new CEOs usually insist on choosing their own executive team. We have witnessed this recently at Boeing, Ford, and Intel. The downside of this type of CEO-CFO relationship is that the CFO's independence is often compromised.

A CFO appointed by an incumbent CEO is more likely to share the CEO's preferences and have incentives to go along with rather than challenge or monitor the CEO's major decisions.[8] Such CFOs' fiduciary duties and responsibilities for monitoring financial decisions might conflict with their loyalty to the CEO who hired them. Having been appointed by the incumbent CEO is therefore considered a significant indicator of a lack of sufficient independence.[9]

In acquisition decisions, CFOs who can maintain a sufficient degree of independence from the CEO are more empowered. They will likely be willing to voice different opinions based on realistic data, and to urge the CEO and the board to carefully evaluate the synergistic value and post-merger implementation costs in order to make more objective decisions. Holley worked with two different CEOs at Walmart who, respectively, took the helm after Holley's appointment as the executive vice president of finance and as CFO. According to Holley, his most important role in M&A decisions as the company's CFO was to be "the healthy skeptic in the room to balance the optimism that can lead some M&A leaders to push for deals that may not align to overall strategy or to build business cases not necessarily based on realistic numbers."[10]

Our findings clearly show that CFOs can exercise more effective monitoring and control, and can substantially limit the sizes of the premiums paid for acquisitions, when they are not appointed to their position by the incumbent CEO. However, less than 40% of the acquiring companies' finance chiefs can be characterized as independent CFOs.

High Status

The premiums companies paid for acquisitions were 7% lower when they had a high-status CFO (determined by a smaller discrepancy between CEO and CFO compensation). However, at most companies, there was a significant gap between CFO and CEO compensation.

The formal power of executives stems from their positions and job titles, but their actual status is related to their social standing and how they are valued within the organization based on their individual characteristics.[11] Since such status indicators are not always directly observable, prior research has often used executive compensation as an objective indicator of an individual's status, and we've done the same.[12]

High-status actors gain high levels of social esteem and influence; accordingly, high-status CFOs can garner support for their points of view from the board of directors and other likely stakeholders. According to Holley, this type of social influence is particularly vital for the CFO's role in acquisitions. As he put it: "When it comes to M&A, CFOs also need to exercise influence and persuasion along with authority."[13]

However, the compensation of a CFO is, on average, less than 40% of the compensation of a CEO. Indeed, over the past decade, the gap between the total compensation for CEOs and CFOs has increased to the benefit of CEOs. This suggests that the status of CFOs has been decreasing relative to the status of CEOs.

In summary, our findings show that when CFOs have established informal power in a company by virtue of their skills, their independence, or their status, the collective leadership will make better decisions about the very consequential matter of acquisitions. How, then, can boards and CEOs be more effective at hiring or developing CFOs with the right characteristics?

Where to Find the Generalist CFO

Large investment banks, diversified industrial groups (such as GE, PepsiCo, and P&G), and tech companies (such as Alphabet and Amazon) are among the best outside sources for companies seeking to hire generalist CFOs. In these companies, the finance function tends to have broader responsibilities, and finance professionals typically gain experience outside of the finance function and in different industries and regions. For instance, Ruth Porat, CFO of Google's parent company, Alphabet, was previously the CFO of Morgan Stanley, the global head of its Financial Institutions group, and co-head of technology investment banking. Though she has spent most of her career in the finance industry, she has had numerous large and varied tech industry assignments involving M&A deals, IPOs, and crisis management. She has also held advisory positions in government and academia.

Similarly, Brian Newman was hired as CFO of UPS at a time when the company was planning to ramp up its capital spending to seize a larger market share from e-commerce and increase its same-day delivery services. Newman started his career as an investment banker and then joined PepsiCo, where he held a variety of finance, operations, and strategy leadership roles in Europe, Asia, North America, and South America. When he was recruited by UPS, he was serving as PepsiCo's chief strategy officer and had recently launched its global e-commerce business.

There are strategic and cultural benefits to bringing fresh perspectives from outside the company into the higher ranks of finance leadership and ensuring that internal candidates for executive positions face outside competition. However, large companies should continue to invest in succession planning with a clear aim of developing a deep bench of generalist talent inside the company who are qualified to ascend to leadership positions in finance.

There are clearly many pathways to helping talented finance professionals develop into generalist CFOs. In general, finance professionals should be exposed early in their careers to different business functions, or to finance assignments that enable them to leverage their deep knowledge of finance across different product lines and geographical regions. These professionals should then be given job assignments with general management responsibilities that can broaden their perspectives and skills and provide them with a holistic view of the company's markets, strategy, and operations.

Hugh Johnston, CFO of PepsiCo, is a good example of this kind of insider generalist. Except for three years in general management at Merck, Johnston has spent his entire career at PepsiCo. After studying finance and earning an MBA, he held a variety of positions in finance, M&A, and strategy at PepsiCo's headquarters and at its North American snack and beverage businesses. He also served as the senior vice president of transformation and the executive vice president of global operations. Indra Nooyi, the former CEO of PepsiCo who recognized Johnston's high potential early in his career, has discussed how she took him "out of his comfort zone in field finance" and involved him in corporate strategy.[14]

Cultivating CFO Independence

Catherine Lesjak had been working at HP for more than 30 years and served as the CFO for four years when Leo Apotheker took the helm. The two had starkly different opinions about whether HP should acquire the British software company Autonomy for $11 billion, a price that represented a 60% premium and 11 times the company's revenue at a time when comparable companies were valued at around three times their revenues.

After telling Apotheker in private that she was opposed to the deal on the grounds that it was too expensive, Lesjak made an impassioned case against the acquisition before the board by explicitly stating, "I can't support it. ... I don't think it's a good idea. I don't think we're ready. I think it's too expensive. I'm putting a line down. This is not in the best interests of the company."[15] Although she did not lose her job, Lesjak later said that after the board meeting, Apotheker told her she would be fired.[16]

While the CEO's decision to proceed with the acquisition ultimately carried the day, the deal cost him his job when the company had to write off $8.8 billion of Autonomy's value. His successor, Meg Whitman, assigned Lesjak to oversee acquisitions.

The HP case vividly illustrates how vital it is for CFOs to be able to act independently, particularly during the early stages of an M&A process — and how starkly their fiduciary duties and responsibilities for monitoring financial decisions may draw

them into conflict with the CEO. We recommend that boards assume a leadership role in CFO selection in order to foster greater CFO independence. When a new CFO needs to be selected, the board should drive the process, including specifying the qualifications sought based on the company's strategic needs — identifying candidates from both inside and outside the company, interviewing the finalists, and making the final hiring decision. Of course, the CEO's input is important, given that every working partnership requires a healthy degree of personal compatibility, but we recommend that they not direct the process. Since the CFO is directly accountable to the board and shareholders, a board-driven CFO succession will also give the right signals to all parties that the board, not the CEO, is the primary decision maker about the CFO's tenure and career prospects at the company.

The CFO must wear the hat of an independent facilitator and monitor of the company's M&A decision-making processes and strategy for growth and value creation. At the same time, they must closely partner with the CEO in the subsequent stages of the execution of a deal and the integration of the target company. Moving between these roles can be complicated. However, CFOs who are appointed, guided, and evaluated within a board-driven framework should be more willing and able to make these role transitions.

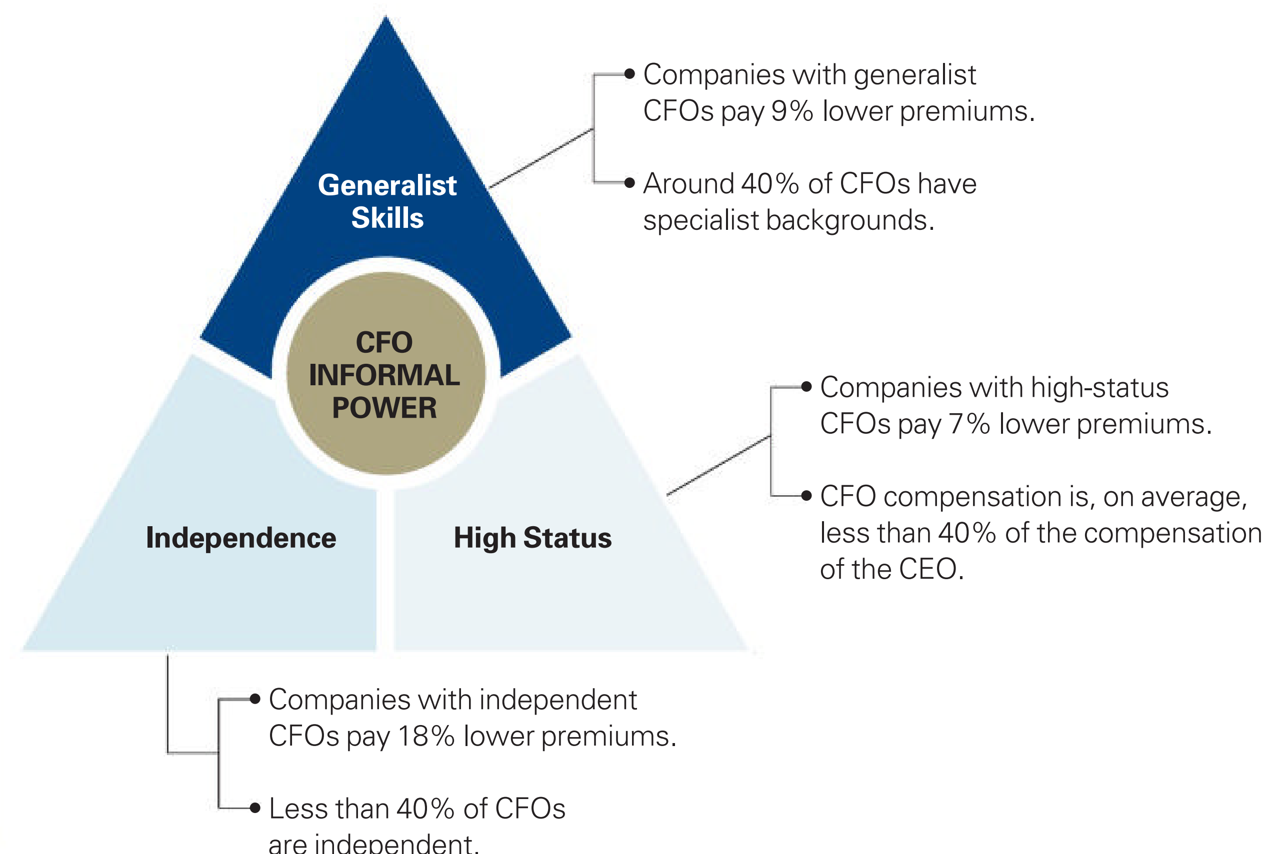
Therefore, we recommend that the boards of companies that are heavily engaged in M&A activity provide clear guidance to the CFO about performance expectations for the different stages of the M&A processes. We strongly advise boards to diverge from prevailing practices, which do not sufficiently differentiate the performance indicators of the CFO from those of the CEO in M&A processes and typically give outsize authority to the CEO in evaluating and rewarding the CFO's performance.

Does the CFO Need a Status Upgrade?

Nooyi, who retired from her CEO role at PepsiCo in 2019, described her relationship with Johnston, the CFO since 2010, as one of virtual equals in a 2016 interview: "We argue and fight about lots of issues. We shut the door and we debate. … When we come out to the executive committee, we have to show a level of unity. … It's very important that the CEO and CFO see eye to eye — and we discuss things ahead of time. … Hugh and I can finish each other's statements. That is why we are able to have

HOW CFOS GAIN INFLUENCE

Most CFOs lack the access to the three sources of informal power that elevate their boardroom influence over strategic M&A decisions, indicating an opportunity for boards to shift those dynamics.



We recommend that boards elevate and leverage the status of the CFO to create more balanced power dynamics between the two top executives, which can eventually lead to a more objective M&A decision-making process.

the constructive fights and the constructive dialogues leading to a better outcome."[17]

Nooyi implied that despite her celebrity CEO status in the business world and considerable power in the company, her power in the C-suite was moderated by a high-status CFO. Johnston gained social influence both from his long experience and reputation at PepsiCo, and his positions as a board member at several organizations and his chairmanship of the audit committee at Microsoft. He also frequently appears on prominent business media channels and has regularly been ranked among top CFOs. Johnston's high status has clearly helped to create more egalitarian power dynamics between the CEO and the CFO, which enables open communication and healthy debate between the executives on important issues. It also improves the chances that the CFO's strategic advice will be taken seriously and valued by the company's leaders and directors.

However, based on recent empirical research on CEO-CFO relationships in U.S. companies and our study's findings, it appears that the CEO-CFO relationship at PepsiCo is more the exception than the norm.[18] We therefore recommend that boards elevate and leverage the status of the CFO to create more balanced power dynamics between the two top executives, which can eventually lead to a more objective M&A decision-making process.

A large gap in compensation between the CEO and other senior executives is probably the most visible sign of differences in their status and organizational influence — and one that boards of acquiring companies might be mindful to minimize in the case of the CFO in particular.[19] We can infer from our research and anecdotal evidence that highly valued CFOs demonstrate more than deep knowledge and strong leadership in the finance function. They also have substantial management experience and a successful track record beyond the finance function, a strong relationship with the company's board, broad external networks, and external visibility. The appointment of a CFO with a combination of some of these characteristics can help ensure that the CFO is able to gain the social influence they need to balance the CEO's power in the C-suite, which may, in turn, improve the quality of the company's M&A decision-making.

External directors must foster a strong relationship with the CFO in order to leverage and enhance that executive's status. In practice, this may be difficult for many corporations to achieve, since the CEO formally governs the relationship of the CFO with the board and largely determines the schedule and the agenda of the board-CFO interactions. Therefore, we recommend that the company's external directors take control of their relationship with the CFO. They can, for example, invite the CFO to attend board meetings when important strategic matters, such as growth and M&A strategies, are being discussed. They can also more actively involve the CFO in board activities, such as board retreats or director lunches, before annual shareholder meetings. Furthermore, since serving on outside boards as a director typically elevates the status of the CFO, external directors can support CFOs in cultivating their external networks and might be able to help them land a seat on the board of another company or an organization to which they are connected.

CFOs imbued with greater social influence are likely to have greater control of the M&A process from the outset, and to find it easier to voice their concerns and challenge the assumptions about the value creation and the price of the deal. As Holley observed: "By leveraging their influence with business leaders and the expertise of their finance team, CFOs can help keep M&A on strategy and avoid chasing 'shiny balls' that may look good on paper or in headlines but fail to achieve their intended outcomes."[20]

OVERPAYING FOR ACQUISITIONS has long been a problem for corporations seeking to expand through M&As, and our research shows that power dynamics in the C-suite are a significant factor. When companies bolster the CFO's informal power, they can mitigate the risk of overpaying for the target company. Corporate CFOs with generalist skills, sufficient independence from the CEO, and high status will be more likely to have the levers needed to address the weaknesses that make companies vulnerable to overpaying for acquisitions, such as managerial agency problems and behavioral biases in M&A decision-making.

As companies have faced increasingly complex and volatile environments disrupted by digitalization and the COVID-19 pandemic, as well as urgent demands from a broader group of stakeholders for sustainable value creation, the responsibilities of CFOs have become more strategic, more dynamic, and broader in scope. The lessons we gleaned from our research can provide companies with guidance to create more optimal corporate governance systems in which CFOs can carry out their dual roles of both partnering with CEOs and providing expert, independent guidance to boards making important strategic decisions.

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The Neuroscience of Customer Experience

When neurological insights inform design thinking, companies can innovate with greater precision.

BY PAUL J. ZAK

Thanks to brands like Sephora, Disney, Bass Pro Shops, and American Girl, consumers have come to expect extraordinary experiences — and companies are under increasing pressure to create them.[1] Even the pros continue to up their game. Take Starbucks, where it has long been understood that a cafe is much more than a place to get coffee. Starbucks Reserve locations elevate the cafe experience to a new level. Patrons watch green coffee beans being roasted and then brewed onsite, while "mixologists" host coffee tastings and prepare unique cocktails. People can shop for local artwork and gifts with drinks in hand. They can also take tours, eat dinner, and attend classes.

Of course, extraordinary customer experiences are not always upmarket. For instance, low-cost airline Avelo flies only to and from small airports that are easy to navigate. It encourages passengers to check their bags in order to speed up boarding and deplaning, and it has eliminated flight-change fees. Avelo's focus makes affordable travel easy and comfortable — major upgrades when you consider the treatment that budget-conscious passengers usually get.

While the variety of extraordinary experiences is wide, they do have a common objective: building brand attachment and customer loyalty. A single bad experience can drive away customers for life, but one that is fantastic creates a desire to buy again. However, trying to create something "mind-blowing" or "amazing" lacks the precision needed to consistently engineer the extraordinary.

Over the past 20 years, my research team has identified a set of brain signals that make experiences feel *valuable* and *emotionally charged*, rendering them *memorable*. Our work has shown that this combination produces a desire to repeat the experience.

Having measured people's brain activity during thousands of experiences, both in my lab and in businesses, I have augmented widely used design thinking

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principles with neuroscience so that anyone can create extraordinary experiences. I'll describe how, but first, let's look at the science in a little more detail.

The Components of Immersion

Powerful emotional responses supercharge memories of experiences.[2] Think about how easily you can recall where you were on 9/11, for example, or how vividly you remember a film that moved you deeply.

An emotional response is an unconscious one, so it cannot be reflected in consciously delivered user feedback such as survey scores and ratings. Indeed, such ratings have almost no predictive value for movie ticket sales, online streaming, sales bumps from advertising, or other product performance measures.[3] The subjective poorly predicts the objective.

When people are asked to quantify their unconscious emotional responses, their brains do not give them access to that information with any degree of accuracy. Unconscious neural activity cannot be made conscious no matter how hard one tries. Without meaning to, people lie. They feel that they must conjure an answer because a researcher has requested one. Furthermore, the answer given is subject to a large set of biases, such as social acceptability, congruence with one's self-identity, and framing effects, further degrading its veracity.

Self-report inaccuracy, a challenge that researchers continually wrestle with, can be avoided by measuring neurologic activity. After my initial research identifying neurochemical predictors of experiences was published, my lab received government funding to measure around 150 brain signals simultaneously to hunt for the neuroelectric signatures that provoke the brain out of homeostasis and compel people to take an action after an experience.[4] Through this body of research, we identified a neurologic state I call *immersion*.[5]

Immersion has two main components. The first is the binding of the neurotransmitter dopamine to receptors in the brain's prefrontal cortex. This alerts the brain to pay attention because something that may be of value is nearby.[6] The second component is the release of the neurochemical oxytocin from the brain stem, triggering emotional resonance with the experience one is having. The electrical activity of these signals can be tracked second by second, and they provide a granular, physical measure of what consumers' brains value and what gives people joy — that magic combination that makes experiences memorable and worth repeating.

In studies that used pharmaceuticals to turn up emotional resonance in the brain and analyze its effects, my research team found that immersion influenced spending decisions. For instance, it substantially increased the number of charitable causes to which people donated and the amount of money they gave after they viewed public service advertisements.[7] Additional studies showed that the administration of synthetic oxytocin increased what people would pay for products, their perceptions of brand competence, and their use of emotional language when describing brands.[8]

When consumer experiences lack emotional resonance, the attentive brain does not value what is happening because the neurological "tagging" is missing. Essentially, physiologic arousal goes unchecked without the calming effect of oxytocin. This is a neurologic state I term *frustration*. Identifying immersion and frustration points can help businesses create extraordinary customer experiences and prevent unsatisfying ones.

Since conducting my early lab research, I have built an automated platform to gather and analyze data from hundreds of businesses. This data shows that immersion generates a mood boost in activities as varied as shopping for clothes, listening to music, and eating sweets.

An emotional response is an unconscious one, so it cannot be reflected in consciously delivered user feedback, such as survey scores and ratings. Such ratings have almost no predictive value for product performance measures.

Design Thinking + Neuroscience

Researchers and innovation teams studying consumer insights often use design-thinking principles to understand and improve consumer experiences. Critically, design thinking attempts to gauge people's emotional responses. But, as discussed above, emotions are inaccurately reported by the conscious brain. Applying insights from neuroscience to design thinking allows us to bridge the gap between what people report and what they feel. This approach can help businesses empathize with customers more effectively, define problems to solve with new products or services, and prototype and test their solutions. No direct brain measurement is needed to apply the underlying ideas, although measuring immersion can help companies accelerate and refine the practice of creating the extraordinary.

Here, we'll look at how all this can play out in three key steps of the design-thinking process.

Empathize. Design thinking starts with observing and interviewing people who are using an existing product or service or for whom no good solution exists. The goal is to empathize with customers to better understand their needs.

Neuroscience research shows that you will get a better result if you take steps to ensure that participants feel psychologically safe before they are observed. In the absence of psychological safety, norepinephrine, one of the brain's arousal neurotransmitters, inhibits the release of oxytocin, a key source of emotional resonance during an experience. This thwarts people's ability to immerse themselves in an experience and give observers useful feedback.[9] Consumer insights teams often hurry participants into study mode in the name of efficiency, not realizing that they are degrading the quality of the information they acquire. Rather than rushing participants into observation or discussion, give them a chance to relax. Putting them in a familiar setting increases psychological safety, as does offering them a snack. Provide time for a bio break if you spend more than one hour with them to ensure that they remain comfortable. Making people feel safe is itself an act of empathy.

Research also shows that consumer ethnographers who are highly empathic more effectively elicit emotional responses.[10] Hire interviewers who have this personality trait to get the most from customer interviews. In addition, interviewers should adopt an empathic style by asking open-ended questions to elicit emotionally revealing words rather than asking participants to do the impossible: rate their feelings on a meaningless numerical scale. Active listening allows one to explore aspects of an experience that cause pain and pleasure and encourages storytelling, the default style people use to describe experiences.[11]

Interviewers should adopt an empathic style by asking open-ended questions to elicit emotionally revealing words rather than asking participants to do the impossible: rate their feelings on a meaningless numerical scale.

Here's an example to illustrate this: A midsized casino in southern Nevada that was planning to expand invited and incentivized a diverse set of customers to enjoy the facility while consumer ethnographers shadowed them to understand patron experiences. Before entering the building, each individual or couple was seated on a couch in a comfortable anteroom and offered soft drinks and snacks while the ethnographers introduced themselves by name and described the study. This put people at ease. Then participants were handed $50 and invited to explore the casino any way they wanted, giving them a sense of control during the observation and further enhancing psychological safety. Participants' impressions were solicited, and as they explored gaming locations and restaurants, neurologic immersion was tracked with app-enabled smartwatches.[12]

After an hour in the casino, participants returned to the anteroom, where they could use the restroom and have more snacks and drinks. Only

Defining the problem to be solved involves identifying sources of user frustration. Frustration manifests neurologically as a stress response, producing physical indicators such as feet-shifting and head-scratching.

then did the ethnographers query them about what they would value in a new casino. The neurologic data and interviews revealed significant frustration when obstructions slowed progress as people tried walking toward gaming tables. Customers also had difficulty finding restaurants when they left the gaming areas, and older participants struggled to read menus. The most immersive parts of the experience were the interactions with dealers and servers. These insights informed subsequent stages of the design-thinking process and were incorporated into the expanded casino's layout and employee training.

Define. The next step, defining the problem to be solved, involves identifying sources of frustration and deciding which ones to address. Frustration manifests neurologically as a stress response, producing physical indicators such as feet-shifting, head-scratching, and curt responses to questions. Product-use frustration can be seen in the repetition of steps to get a device to work or clumsy fumbling with buttons or knobs.

Tolerance for frustration varies substantially across individuals and contexts, so it's important that researchers control for differences when analyzing pain points. Then designers can rank customer pains to identify the core problems to solve. Neurologic measurement allows for greater precision, but the physical indicators of frustration also provide valuable information.

A major point of frustration during many customer experiences — such as shopping for groceries, renewing a driver's license, or spending time at a crowded amusement park — is waiting in line. To understand this problem, Walt Disney Imagineering, which designs the Disney theme parks, builds a variety of mock-ups, from storyboards to scale models to virtual reality simulations, so that designers can search for frustration points and reduce or prevent them. This is how Disney discovered that having guests snake into an attraction decreased the feet-shifting associated with standing still and that posting signs with wait times decreased stress responses associated with uncertainty, like finger tapping. The Disney team also discovered that they could prevent frustration by eliminating obstacles to traffic flow between attractions. For example, they smoothed out choke points by reducing the size of planters people needed to walk around.

My team tested Imagineering's attention to detail in park design by collecting neurologic data at Disneyland from visitors we outfitted with smartwatches to measure immersion and frustration. The data showed that periods of neurologic frustration in lines were surprisingly rare. Attraction entrances are richly designed, giving visitors' brains puzzles to solve. A full day's worth of data showed that half the time, entering a ride was more immersive than the ride itself. We were impressed by the astute design insights and execution by Disney's Imagineering team.

Across a variety of experiences at Disneyland and elsewhere, we also found that immersion is contagious — and pain points are diminished — when groups of people share an experience. Watching someone discover an "Easter egg" while entering the Indiana Jones Adventure at Disneyland provides enjoyment and excitement to others, reducing the frustration of a long wait.

Prototype and test. It's essential to prototype ideas and give them a small-scale trial run before committing to production — and to continue testing and improving them after they enter the market. Conducting surveys and focus groups to gauge which prototypes and products people like the most is a flawed approach for several reasons. For starters, iterative design changes are typically

only unconsciously perceived, so it is difficult for people to assess them during interviews or through ratings. Even if you explicitly highlight changes for people to rate, the ratings are still unanchored (that is, no two customers' "10 out of 10s" or "likes" are the same) and are largely unpredictive. When prototyping and testing more innovative or unusual experiences, you'll run into a different obstacle: People lack a reference point when trying to describe whether and, especially, why they like or dislike the offering.

Determining whether customers will buy a product requires data on the emotional value people derive from it; it is emotions that drive purchase decisions.[13] As discussed above, the brain hides emotional responses from conscious awareness. As a result, intentions to purchase in the future poorly predict actual purchases of new products.[14] One way to ground predictions in observation is to see how long testers engage with the prototype or product. When I ran tests for a new virtual reality product, time of use increased along with the number of positive emotional words people used to describe the experience. And measuring neural responses gave us time-linked objective data on immersion or frustration that were paired with videos of the prototype in use. Another observable measure is how many early testers ask to buy prototypes.

The global appliance maker Electrolux has a consumer science lab in Stockholm that looks and feels like a kitchen in a typical home but has 15 hidden cameras that capture how consumers use prototype appliances. Staff members also query study participants for usage insights as they try new gadgets. Some tests include the collection of neural data via smartwatches that enables emotional responses to be tracked in real time. For example, neural signals can distinguish peak immersion moments that produce joy from moments of frustration when a participant is spending more time than expected adjusting the controls on a dishwasher. Real-time neural data can also inform the questions consumer insights team members ask. Whether or not direct neural measurement is included, members of the insights team ask open-ended questions about what consumers are experiencing as they try new products, track the time spent getting each appliance to start, and take note of any physical indicators of emotional responses. The new-product team then reviews videos of the lab experiences to determine whether a prototype is ready to go to market or needs more work.

As customers in the marketplace use a product or service, behavioral feedback (such as adoption rates and usage times) can reflect immersion and identify the next set of feature improvements. Even without direct measurement of dopamine and oxytocin, examining the behavior of "superfans" can reveal whether this important, extremely enthusiastic group of customers is delighted or frustrated.

Superfans experience high levels of immersion while using a product or service, building neurologic tension that is relieved through social media shares. Because these posts positively correlate with immersion, companies can use them to gauge how effectively they are meeting superfans' needs. Natural language processing software provides additional insights by quantifying positive and negative emotional words in posts. The ratio of positive to negative emotional words is a metric that can be tracked along with sales to assess whether a company should continue to refine a product or feature or kill it. If superfans complain about a feature, it should be investigated for improvement or elimination, since typical users will have much less tolerance for frustration.

Determining whether customers will buy a product requires data on the emotional value people derive from it; it is emotions that drive purchase decisions. One indicator is how long testers engage with the product.

Superfans can also participate more directly in the product development process, cocreating extraordinary experiences for themselves. For example, a mobile gaming company engaged its superfans to iterate on character assets for a new game release. After inviting them to participate in beta testing, the company used social media posts and direct immersion measurement to segment superfans based on their favorite characters. They were then microtargeted: Beta testers received a "share" link that included a cartoon rendering of themselves as their game character. The message asked them to replace their social media picture with the cartoon and to tell the world why their character was best. Characters and game play were then tweaked accordingly before the broad release of the game. This deep engagement of superfans enabled the company to improve its product and boost game adoption during its wide release.

PRODUCT AND CONSUMER experience teams are increasingly using neural insights to determine what consumers really value, what brings them joy, and what reduces or eliminates their pain and frustration. The payoff? Smart product design that provides extraordinary experiences, boosting customer loyalty and profitability. As technologies and devices continue to shrink in cost and size, more businesses can move away from consciously filtered self-reports and embrace brain-based measurement in their quest to innovate and better serve customers.

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EXECUTIVE BRIEFINGS

SUMMER 2022 • VOLUME 63 • NUMBER 4

Unlock the Power of Purpose

Álvaro Lleó de Nalda, Alex Montaner, Amy C. Edmondson, and Phil Sotok **pp. 20-23**

Key Insight: A new framework can help companies implement a corporate purpose that engages employees and drives their daily actions.

Top Takeaways: To benefit from corporate purpose, leaders need a deliberate, sustained approach to implementing it. The authors developed the Purpose Strength Framework, which provides a set of three processes for doing so. *Purpose knowledge* ensures that employees understand the purpose and its connection to business strategy. *Purpose internalization* connects the purpose with employees' values. Finally, *purpose contribution* measures how the company has fulfilled its purpose and identifies how it can continue to do so.

REPRINT 63427

How a Values-Based Approach Advances DEI

Anselm A. Beach and Albert H. Segars **pp. 25-32**

Key Insight: A new model provides a structured and measurable framework for transforming the workplace through diversity, equity, and inclusion.

Top Takeaways: Leaders seeking to advance diversity, equity, and inclusion in their organizations need approaches that frame DEI as an opportunity for all employees to meaningfully engage with. The authors advocate a new approach: the Values/Principles Model, or VPM. It is based on cultivating four values — representation, participation, application, and appreciation — along with seven guiding principles, including "Build a moral case" and "Develop new mental models."

REPRINT 63401

For ordering information, see page 4.

Why We Don't Talk About Meaning at Work

Marjolein Lips-Wiersma, Catherine Bailey, Adrian Madden, and Lani Morris **pp. 33-38**

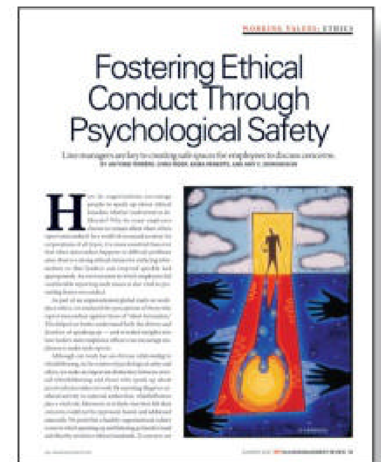
Key Insight: Managers can move beyond four key barriers to talking about — and cocreating — meaningful work in their organizations to improve employee engagement, productivity, and innovation.

Top Takeaways: The more employers try to tell employees where to find meaning in their work, the less likely people are to find it. An authentic sense of purpose is discovered, not imposed. But first, managers and employees must learn how to talk with one another about this broad and somewhat existential issue. The barriers that make such conversations difficult include discomfort talking about big issues in a work context,

questions around the definition of meaning, trouble articulating the pain points that inhibit meaningful work, and a sense that only leaders deserve to find meaning at work.
REPRINT 63407

Fostering Ethical Conduct Through Psychological Safety

Antoine Ferrère, Chris Rider, Baiba Renerte, and Amy C. Edmondson **pp. 39-43**


Fostering Ethical Conduct Through Psychological Safety

Key Insight: Psychological safety plays an integral part in shaping the ethical climate of an organization and influences whether employees feel comfortable reporting misconduct.

Top Takeaways: New research finds that reporting on unethical conduct in the workplace is linked to employees' degree of psychological safety. Employees who reported lower scores on a measure of psychological safety were less likely to report unethical behavior through effective channels — but were also more likely to observe more instances of unethical behavior. The authors argue that a healthy organizational culture is one in which speaking up and listening go hand in hand and thereby reinforce ethical standards.
REPRINT 63402

AI on the Front Lines

Katherine C. Kellogg, Mark Sendak, and Suresh Balu **pp. 44-50**

For ordering information, see page 4.

AI on the Front Lines

Key Insight: To keep AI progress from stalling at the adoption stage, developers must ensure that end users' workflow concerns are addressed.

Top Takeaways: Successful AI adoption requires developers to think beyond a project's business goals and to specifically address the concerns of end users. How will the new features and process affect their day-to-day work? One ER doctor's comment that "we don't need a tool to tell us how to do our job" is typical of many front-line employees' reactions. In a study of AI-based decision support tools, the authors observed frequent misalignment between project sponsors' needs and users' priorities and preferences. They found that AI developers can decrease conflicting stakeholder interests and increase the likelihood of tool adoption by identifying tactics to increase a tool's benefits to end users, reduce their labor, and protect their autonomy.
REPRINT 63412

Set Up to Fail

Kimberly A. Whitler, Ed Tazzia, and Stephen Mann **pp. 51-54**

Set Up to Fail

Key Insight: C-level executives are more likely to succeed when organizations align expectations, responsibility, and experience when designing their roles.

Top Takeaways: At just over five years, the average tenure for C-suite jobs is no better than that of the workforce at large, despite the expense and effort invested in hiring for these positions. An analysis of C-suite job specifications used in recruiting CFO, CIO, and CMO functions points to a cause: misalignment between expectations, responsibilities assigned, and skills required. The authors suggest that incomplete and vague job specs can keep new hires from doing well, leaving conflict, friction, and

frustration in their wake. The authors provide a framework for designing well-aligned jobs, including specifying role expectations with detail and clarity, and clearly identifying the measures against which role success will be judged.
REPRINT 63411

IPO Disclosures Are Ripe for Reform

Aswath Damodaran, Daniel M. McCarthy, and Maxime C. Cohen **pp. 55-61**

Key Insight: More focused financial disclosure rules would force pre-IPO companies to give investors a more accurate and realistic view of their prospects.

IPO Disclosures Are Ripe for Reform

Top Takeaways: Pre-IPO disclosures have grown increasingly bloated and typically shape a rosy narrative about a company's prospects while omitting information relevant to new business models. The authors propose "triggered" disclosures tailored to a company's value drivers. In these disclosures, claims about customer value and potential market size would require objective supporting data. Such disclosures would provide investors with a better basis for valuing and pricing today's companies and could force founders and managers to tell more realistic stories about their businesses.
REPRINT 63418

Manage the Risks of Software Reuse

Gregory Vial **pp. 62-65**

Key Insight: Reusing software code is common. Leaders must be aware of potential vulnerabilities to mitigate exposure to risk.

Manage the Risks of Software Reuse

Top Takeaways: Software developers rely heavily on preexisting components, typically sourced from public repositories, to add functionality. But software reuse has cybersecurity implications. The recent discovery of a critical vulnerability in a commonly used component called Log4j affected millions of devices and highlights this danger. Risk lurks in both homegrown and packaged software, where there could be vulnerabilities buried deep within the code. The authors provide four key insights for leaders to ensure that their technology function is managing these risks.
REPRINT 63414

Mastering Innovation's Toughest Trade-Offs

Christopher B. Bingham and Rory M. McDonald **pp. 66-72**

Key Insight: Innovation in dynamic environments is rife with critical tensions that can sink teams if left unaddressed or mishandled.

Mastering Innovation's Toughest Trade-Offs

Top Takeaways: More than 90% of high-potential ventures fail to meet projected targets, while roughly 75% of the products released each year bomb. Innovation failures in dynamic environments usually track back to one or more tensions that are embedded in eight questions that leaders often struggle to answer. Leaders who get the answers right can transform

the tensions from reductive to productive and not only tackle some of innovation's toughest trade-offs but also significantly improve the odds of innovation success for their organizations.
REPRINT 63423

Break the Link Between Pay and Motivation

Jonas Solbach, Klaus Möller, and Franz Wirnsperger **pp. 73-77**

Key Insight: An experiment shows that target-independent fixed compensation can improve sales force performance, retention, and engagement.

Top Takeaways: Decades of research show that pay-for-performance compensation systems are not well suited to knowledge work. The authors tested a fixed-compensation system across a national sales force at Hilti Group, which sells its products and services directly to contractors on construction sites. The new approach bolstered sales results, retention, and engagement. It makes a strong case for leaders considering whether to finally leave behind the pay-for-performance model.
REPRINT 63403

Break the Link Between Pay and Motivation

Why Some CFOs Make Better M&A Deals

Ayse Karaevli and Serden Özcan **pp. 78-84**

For ordering information, see page 4.

Key Insight: When companies bolster their chief financial officer's informal power, they can mitigate the risk of overpaying for an acquisition target.

Top Takeaways: Many companies pay an excessively large premium to close an acquisition. The authors analyzed nearly 2,000 acquisitions by U.S. companies over more than 20 years and found that companies are less likely to overpay if their CFO has one or more of the following characteristics: They possess generalist skills, they demonstrate independence from the CEO, and they enjoy high status in the organization. These characteristics confer greater influence in strategic decision-making. Companies might improve corporate governance by hiring such CFOs.
REPRINT 63417

Why Some CFOs Make Better M&A Deals

The Neuroscience of Customer Experience

Paul J. Zak **pp. 85-90**

Key Insight: By applying neural insights to innovation, businesses can create memorable experiences — that customers will want to repeat.

Top Takeaways: Thanks to brands like American Girl, Bass Pro Shops, Disney, and Sephora, consumers have come to expect extraordinary interactions — and companies are under increasing pressure to create them. New research shows that by augmenting design thinking with neuroscience, they can determine with greater accuracy what customers value, what brings them joy, and what reduces their frustration. Researchers have identified a set of brain signals that make experiences feel valuable and emotionally charged and thus more memorable. Their work shows that together, these signals boost customer loyalty and profitability — and produce a desire to buy again.
REPRINT 63406

The Neuroscience of Customer Experience

Making Sense of the Post-Pandemic Future
(Continued from page 96)

business. Over these lunches, they've been talking through a side project they could do together that would broaden John's business startup skills. He is tentatively exploring the possibility of becoming an entrepreneur.

Many organizations, meanwhile, are looking both inward and outward. They're grappling with what they need to do differently to attract and retain talented people and what their point of view about work should be. But many tell me they're also deeply concerned about what kinds of precedents their competitors are setting.

> Many leaders are stuck between imagining what is possible and concern that more flexible working arrangements will negatively affect performance. They grapple with whether change will be necessary or possible.

Social Pioneers and First-Mover Organizations Paving a Way Forward

Organizations are right to feel uneasy if they aren't yet knee-deep in their own experiments. In my interactions with leaders and companies in recent months, I've heard talk about a wide range of trials that have been grabbing their attention that involve where people work, when people work, and finding people to work.

Expect the next moves to come from both individual social pioneers and first-mover organizations. These are the people and places responding to this pressure right now with creativity.

Individual social pioneers include those who are working a four-day week, switching from a high-powered job to working for a social enterprise, going part time to spend more time with their kids, ditching their job to start their own business, or taking a sabbatical to explore the world. By making these choices, they become role models for people like John — those who are primed for change but unclear about what to do next.

Social pioneers are showing what these alternative life trajectories and possible selves actually look like. And as more people (particularly those who are highly talented) engage in this inner journey, collectively they create real pressure for organizational change. Some are asking for more flexibility when it comes to when or where they work so they can proactively create a new work-life path. Others are simply resigning — causing executive teams to ask, "What did we do wrong?"

In parallel, the leaders of first-mover organizations are meeting this moment in inspiring ways. Among them are these examples from the U.K. of companies and new policies:

- Yo Telecom, Hutch, and MBL Seminars are among several companies participating in a six-month trial of a four-day workweek that's being overseen by academics from Oxford and Cambridge universities and Boston College.
- Deloitte has encouraged its 20,000 U.K. employees to decide "when, where, and how they work." As the region's chief executive, Richard Houston, said, "We let our people choose where they need to be to do their best work, in balance with their professional and personal responsibilities."
- Saga, an insurance company that focuses on serving the needs of people over age 50, has begun allowing staff members to take a week off from work, with pay, to celebrate the birth of a grandchild.
- Linklaters, a U.K. law firm, has added a four-week sabbatical once every three years to its list of employee perks.

These kinds of corporate initiatives, combined with the individual actions of social pioneers, will shape the outer boundaries of what's possible. Their examples will illustrate new paths for working and living. My guess is that any young consultant who feels frustrated by the edict that "everyone has to be back in the office every day" will look at what Deloitte is offering and wonder whether they are at the right company.

I acknowledge that this is not straightforward. Right now, many leaders are stuck between two sources of tension: the tension of enlightenment, where they can begin to imagine what is possible, and the tension of denial, where they are concerned that more flexible working arrangements will negatively affect performance. They grapple with whether change will be necessary or possible. These are legitimate tensions that are only exacerbated by the sense of exhaustion many people feel.

But leaders have a chance now to ease this tension. They can do this by being open to listening to and acknowledging the inner journeys their employees are on, and by looking outside to other companies for inspiration and ideas.

***Lynda Gratton** (@lyndagratton) is a professor of management practice at London Business School and founder of the advisory practice HSM. Her new book,* Redesigning Work: How to Transform Your Organization and Make Hybrid Work for Everyone, *was released in the U.S. in May by MIT Press.*

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COLUMN

Making Sense of the Post-Pandemic Future

BY LYNDA GRATTON

MORE THAN TWO YEARS into the pandemic, we're in a moment when both leaders and employees are trying to make sense of how the experience has changed them and imagining what comes next. In a webinar I led in early February with 250 people from over 100 companies around the world, many leaders expressed that they are feeling "betwixt and between" the certainties of the past and the unknowns of the future.

Three messages came through loud and clear. The first is that in this time of sensemaking, individuals right now are looking inward — working through the impact of their changing habits, networks, and skills, and beginning to imagine other life trajectories and possible selves.

The second message is that leaders and the organizations they manage are looking outward more than usual — analyzing how talent markets are changing and what their competitors are doing. This is creating momentum and a force for change, but also frustration and anxiety, given institutional lag. Leaders are worried about inertia holding their companies back.

The third message is that as this momentum for change is growing, it is those individuals and organizations that are acting now that will pave the way and become role models for everyone else.

The Inward/Outward Dichotomy

I've been struck by how deeply individuals have taken their experiences of the past two years and used them to look inward.

Take John, a team leader in one of the financial companies I've been studying. He is not alone in telling me, "I feel like I am beginning to change who I am. I don't commute anymore to the office every day, I've spent less time with my colleagues and more time with my neighbors, and I've surprised myself with my digital skills — in fact, the whole team is using virtual collaborative tools in new ways."

Like many people I have spoken to, John has found that along with his new routines, connections, and competencies have come changes to his sense of identity — his sense of who he is and the alternative lives available to him. For instance, John told me that he now regularly has lunch with a neighbor who is an entrepreneur running a small

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