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The Cultural Benefits of Artificial Intelligence in the Enterprise

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Executive Summary

The benefits of artificial intelligence go well beyond improved efficiency and decision-making. AI can also improve organizational effectiveness and strengthen teams and enterprise cultures.

Artificial intelligence can generate cultural as well as financial benefits for organizations. With AI systems in place, teams can perform tasks with more pride and confidence and collaborate more effectively: They can actually get stronger. These cultural benefits can penetrate the foundation of business operations, improving assumptions that drive organizational behaviors and ensuring the pursuit of smarter goals.

When conducting our research, we heard story after story from executives familiar with AI implementations in their organizations. The overarching message was clear and backed up by survey data: Business culture affects AI deployments, and AI deployments affect business culture.

This *MIT SMR*-BCG report — based on a global survey of 2,197 managers and interviews with 18 executives — identifies a wide range of AI-related cultural benefits at both the team and organizational levels. Among survey respondents with AI implementations that improved efficiency and decision-making, for example, more than 75% also saw improvements in team morale, collaboration, and collective learning. Culture change from using AI transcends the legitimate, but myopic, promise that AI will liberate workers from drudgery.

These cultural changes are more than a side benefit. AI-related cultural and financial benefits build on each other. Survey respondents who saw significant financial benefits from their AI initiatives were 10 times more likely to change how they measure success than those who saw no such benefits. In some cases, AI helped leaders identify new performance drivers, which led to new assumptions, objectives, measures, and patterns of behavior, along with new areas of accountability. AI also helped these organizations realign behaviors and become more competitive.

Building a culture that supports innovation with AI has an effect on competitiveness. Our research found that respondents who use AI primarily to explore new ways of creating value are far more likely to improve their ability to compete with AI than those who use AI primarily to improve existing processes. Respondents who said they use AI primarily to explore were 2.7 times more likely to agree that their company captures opportunities from adjacent industries — because of AI — than respondents who use AI primarily to improve existing processes.

Whether it's reconsidering business assumptions or empowering teams, managing relationships among culture, AI use, and organizational effectiveness is critical to increasing AI's value to an organization. This report offers a data-driven analysis of these relationships at both the team and organization levels.

Introduction: Cultural Benefits of AI

AI implementations that improve effectiveness often strengthen team and enterprise cultures. Executives intimately involved with developing and implementing AI solutions offered numerous examples of how artificial intelligence helped their organizations become more efficient and make better decisions. What's more, their team cultures were changing in response to these new levels of effectiveness; the cultural changes encompassed what teams learned, how they learned, how they worked together, and, in some instances, what they enjoyed about their work. Many teams that used AI became stronger teams.

Pierre-Yves Calloc'h, chief digital officer at Pernod Ricard, the world's second-largest seller of wine and spirits, offers a case in point. The company began using AI technology to optimize salespeople's store visits. Historically, the sales staff had relied heavily on their own experience to decide which stores to visit. The company expected that its new AI-based system of digital assistants, which uses data to prioritize stores, would encounter resistance. However, salespeople embraced the technology, which augments rather than replaces their own knowledge.

Calloc'h fostered trust in the system by involving recognized business experts in the tool's design and gathering extensive feedback from pilot users. His team ensured that the reasons for the AI system's recommendations were clear, and clearly communicated, to the salespeople. In addition, his analytics team used interviews with the business experts to explore unexpected insights and feed those insights into the recommendation engine. That bolstered the tool's credibility among the experts and improved the effectiveness of the tool itself. According to Calloc'h, salespeople told him, "There's no way I'm going back to my previous way of doing things. I trust that the system has been looking at a lot of options when recommending the 20 stores that I should visit this week. I'll add some because there is outside information that I have and the tool doesn't have."

The technology also provides employees with new recommendations that strengthen their sales pitches. "The system is recommending listing only relevant products matching the store profile, for instance, because of the category of consumers living around the store and other factors. That gives salespeople more confidence, more clarity, and higher morale," says Calloc'h. Using AI not only directly improved efficiency and decision quality but indirectly changed team culture through its effects on confidence, clarity, and morale.

Our global survey attests that Pernod Ricard isn't alone in experiencing AI's effect on team culture: Many respondents who saw improvements in efficiency and decision quality because of AI also saw team-level improvements in morale (79%) and other cultural areas.

But AI's effects on culture don't stop at the team level. Our research further suggests that the cultural benefits of AI adoption can extend to organizations as a whole. For example, we found that some executives employ AI to reassess strategic and operational assumptions. Increasingly, executives are recognizing that they can use AI to discern performance drivers that they themselves cannot identify through intuition and experience alone. Radha Subramanyam, president and chief research and analytics officer at CBS, describes the broadcast network's efforts to critically assess long-standing organizational assumptions about how it measures the success of TV shows. "I gave our AI teams 50 years of KPIs [key performance indicators] and 50 years of consumer research," she recalls. "I said, 'Here are the things that we believe are important in this consumer research — quantitative and qualitative. I'm giving you all the raw data. Are the things that I habitually look at the right KPIs to drive my mega-KPI, or are they wrong?'"

The analysis affirmed the utility of two historical KPIs but also added two new KPIs to the set. "We got better by going through this AI exercise," Subramanyam noted. "The analysis changed what we were looking for and helped improve our performance." For CBS, AI provided both the opportunity and the means for reexamining fundamental assumptions about business operations and organizational effectiveness. The assumptions that guide team behaviors and enterprise goals are central to organizational culture.[1]

Revising organizational assumptions and measurements is fairly typical of organizations that adopt AI: 64% of companies that have integrated AI into their processes say that their use of AI led to changes in their KPIs. In some cases, AI solutions directly reveal new performance drivers, as at CBS, where they led to new KPIs. In other cases, using AI enables stronger performance, which obsolesces legacy measurements that no longer reflect desired goals. Realigning behaviors to achieve new objectives often has a direct effect on culture.
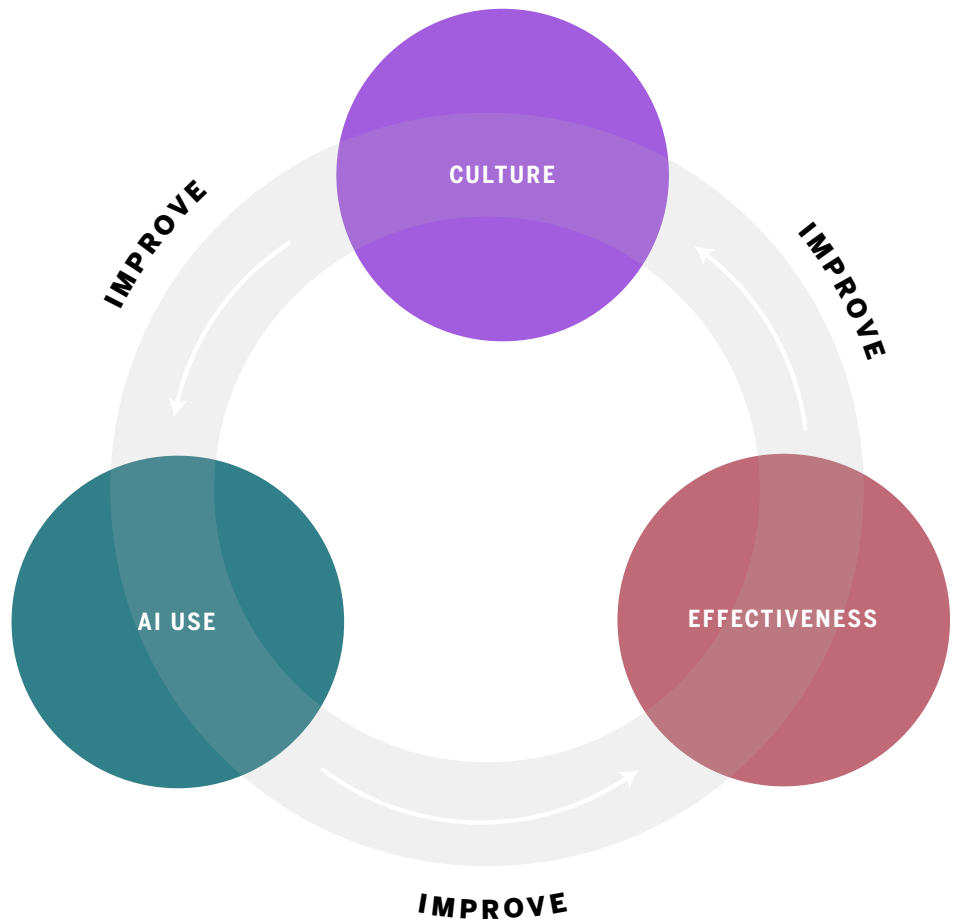
FIGURE 1
The Culture-Use-Effectiveness Dynamic

Improving each component of the C-U-E dynamic can lead to a virtuous cycle of cultural improvement.

Our research identifies a continuous dynamic among culture, AI use, and organizational effectiveness. (SEE FIGURE 1.) We use this Culture-Use-Effectiveness (C-U-E) dynamic to explain mutually reinforcing relationships at both the team and organization levels. These relationships offer a useful perspective on how AI adoption can influence managerial assumptions, team behaviors, and overall organizational competitiveness.

The C-U-E dynamic is difficult to achieve at scale. Executives need to learn what AI can do for teams and the organization, and develop a common language for decision-making with AI. Managers need to elicit active support from employees who must work with AI solutions that replace or augment existing practices. After AI solutions' initial implementation, organizations must continuously adapt them, which requires ongoing participation from AI teams and end users. Once AI solutions prove to be effective, the resulting cultural and productivity benefits encourage even more AI use throughout the enterprise.

AI that is effective at the team level, however, doesn't always yield financial success at the organization level. Only 11% of organizations in our survey attributed substantial financial benefits to their AI initiatives, which is the same result we obtained from our survey last year.[2] It may be that few companies are implementing AI at a scale sufficient to generate "substantial" financial benefits. But another possible explanation is that those organizations that obtain substantial financial benefits have begun to master the C-U-E dynamic. They learned both how to culturally adopt and benefit from AI, and how to use AI to glean financial rewards. Our research suggests that these are connected, not separate, activities.
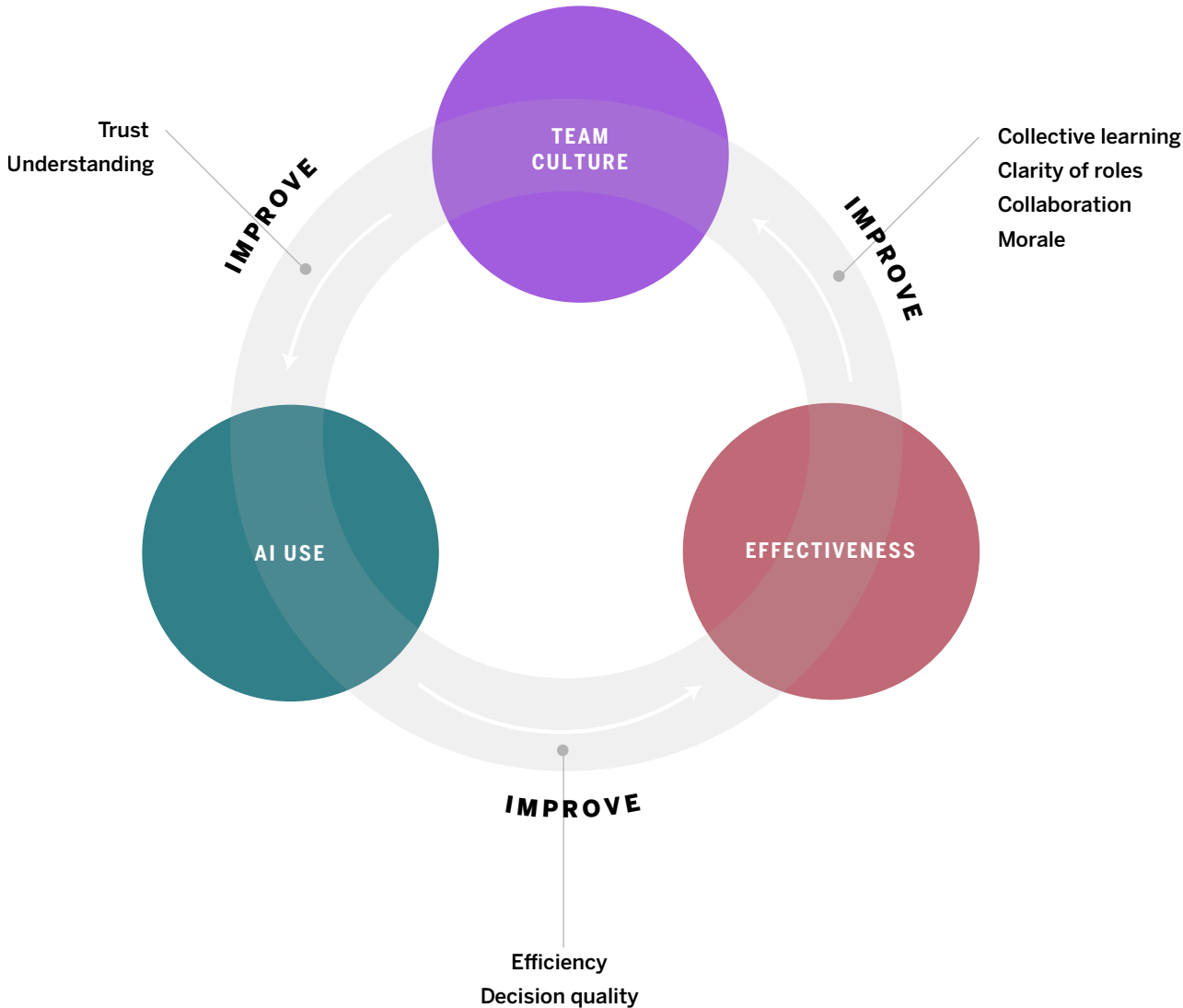
Team-Level Cultural Benefits

AI-based solutions that generate new ways of working can incite resistance from teams entrenched in existing cultures. Anju Gupta, vice president of data science and analytics at Northwestern Mutual, acknowledges that when companies introduce new AI initiatives, "there is this natural resistance that you'll bump up against." Culture is like a team's immune system: It is *for the group what defense mechanisms are for the individual*.[3] Our research indicates that managers often recognize the need to cultivate team acceptance of AI, such as by including end users in the development process, building trust in AI system performance, and encouraging teams to be open to changing their work processes. (SEE THE SIDEBAR "BUILDING TRUST TO CULTIVATE AI BENEFITS," PAGE 7.)

Our findings also distinguish the culture change required to adopt AI from cultural changes that emerge after adopting AI. Figure 2 shows the C-U-E dynamic at the team level: Team culture can improve AI adoption, which in turn improves team effectiveness, which in turn improves team culture. Learning is a key component of each element in the dynamic.

FIGURE 2
The Team Culture-Use-Effectiveness Dynamic

As AI helps improve efficiency and decision quality, team culture benefits.

Trust
Understanding

IMPROVE

TEAM CULTURE

Collective learning
Clarity of roles
Collaboration
Morale

IMPROVE

AI USE

EFFECTIVENESS

IMPROVE

Efficiency
Decision quality

BUILDING TRUST TO CULTIVATE AI BENEFITS

Both financial and nonfinancial benefits from AI depend on employees working with and trusting AI. Yet our survey respondents described numerous reasons why end users may mistrust AI solutions. (SEE FIGURE 3.)

Close to half the respondents believed that mistrust of AI stemmed from a lack of understanding (49%) or training (46%). Paul Pallath, global technology head of data, analytics, and AI at Levi Strauss & Co., said that the company invested widely to improve understanding; it selected employees "from various different domains, from the retail store to people in IT to people in business, and called them into an eight-week, highly immersive AI/ML boot camp." The first cohort, which graduated in May 2021, consisted of more than 40 employees from 14 locations around the world. Pallath believes the investment was worth it because "they need to have trust. And building trust in AI/ML and machines can only happen if people themselves are part of the process rather than being subjected to it."

But the amount of user involvement isn't an easy decision. Too little context behind decisions (34%) or, conversely, too much information (17%) can erode trust. Sander Stomph, former head of operational excellence at Dutch airline KLM, recognizes that tension in working with AI solution users. "What we did the past couple of years is
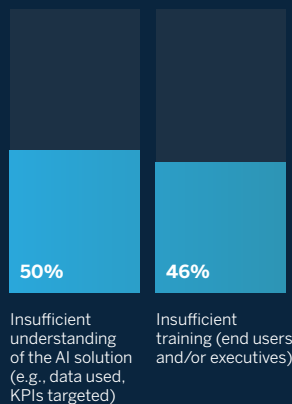
develop shoulder to shoulder with the people who are actually going to use these things, up to the customer," he explained. "If it impacts a customer, you develop it also with customers. If it impacts a planner, you develop it with planners and you explain it to them, even up to the point that you say, 'Hey, we don't know the price of this, but we're going to put an amount of 200 euros as a proxy. Do you agree that we put in 200 euros? As the gate agents, you are better positioned to decide this.'" Stomph believes that a high level of involvement leads to a view of AI as "a trusted colleague." In his words, the technology "becomes more than just a vague tool and really more of somebody that you can trust and rely on." Stomph sees the temptation to "dumb it down" and simply show users the end result in a flashy package. But he says that KLM works "to be genuine and connect with people, to make sure that they really like these solutions because of the content and not because of the package."

Still, no amount of user education can overcome a poor tool. Data of insufficient quality (31%), failure to meet expectations (20%), or just incorrect solutions (14%) all can contribute to mistrust in the system. Colin Lenaghan, senior vice president of global net revenue management at PepsiCo, recognizes how small improvements can add up. PepsiCo believes that working to "prove stuff out and very overtly socializing" cumulatively "builds confidence, builds trust, and helps you to move from one step to the next." Lenaghan describes how the early "capabilities immediately inspired trust and credibility" among those who used PepsiCo's AI-based promotional optimization tool. "That's a really important process for us, because you're starting small, you're building confidence. And I think that's going to be important, because if you really took on quite a large, big-bang approach with this thing, I just think it's overwhelming."
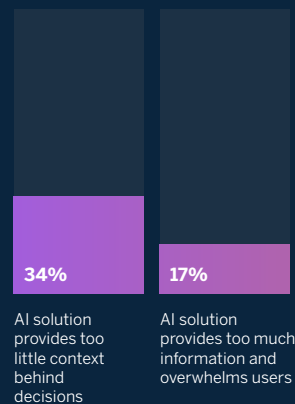
FIGURE 3
AI Adoption Depends on Trust
Insufficient understanding and training are the greatest obstacles to building trust in AI.
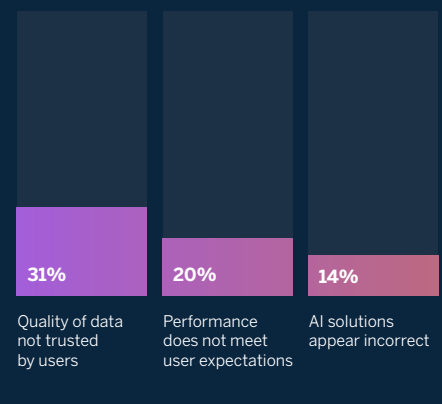

Understanding and Training

50%
Insufficient understanding of the AI solution (e.g., data used, KPIs targeted)

46%
Insufficient training (end users and/or executives)

System Design

Too much or too little context

34%
AI solution provides too little context behind decisions

17%
AI solution provides too much information and overwhelms users

Data quality and performance concerns

31%
Quality of data not trusted by users

20%
Performance does not meet user expectations

14%
AI solutions appear incorrect

(multi-select question; responses may exceed 100%)

FIGURE 4
**Improving Team Effectiveness With
AI Bolsters Team Culture**

After implementing AI solutions, teams report improved
collective learning, clarity of roles, collaboration, and morale.

58%

agree teams saw improvements
in **both** efficiency and decision
quality since their teams
implemented AI.

Collective learning	Clarity of roles	Collaboration	Morale
87%	65%	78%	79%
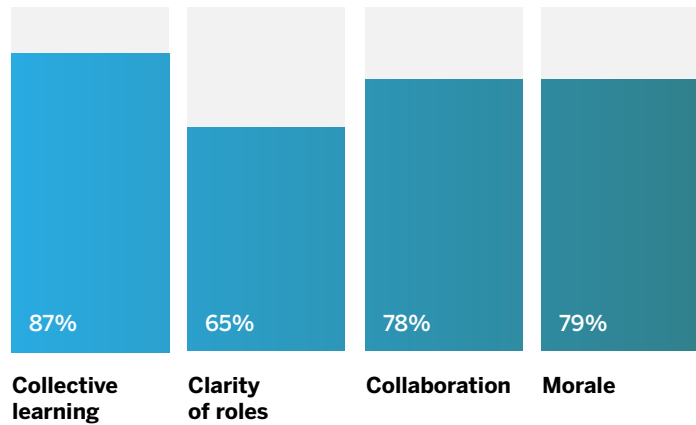
17%

said they have seen **either no
impact or a decrease** in efficiency
and decision quality since their
teams implemented AI.

Collective learning	Clarity of roles	Collaboration	Morale
36%	8%	20%	21%
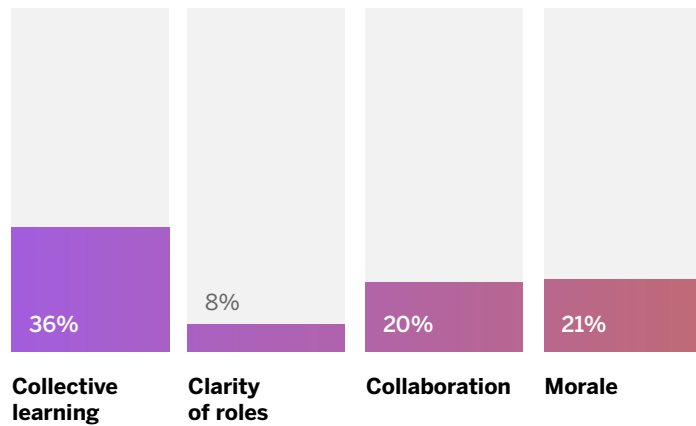
(percentage of respondents reporting improvement)

Certainly, culture influences AI adoption. This well-researched connection usually involves team members learning about, and coming to trust, AI outcomes. In earlier research, we identified mutual learning as a valuable contributor to AI adoption and use.[4]

Using AI can also improve team effectiveness. We focus on efficiency and decision quality as indicators of effectiveness. About 58% of all survey respondents who participated in an AI implementation agreed that their AI solutions improved efficiency and decision-making at the team level. That is, adding AI to the team improved team effectiveness. The survey findings reinforce what we heard in our executive interviews: Using AI can strengthen team performance.

But, more importantly, cultural benefits emerge when teams improve decision-making and efficiency with AI, and, transitively, these benefits would not have emerged if the team's culture had not embraced the AI solutions in the first place. When teams become efficient and make better decisions because of AI, several aspects of culture also improve, including collective learning, collaboration, morale, and clarity of roles. Figure 4, page 8, shows the extent to which effective AI — when AI improves efficiency and decision quality — affects these culture aspects at the team level.

Effective Use of AI Improves Collective Learning

Culture reflects the accumulated learning that a given group acquires and passes on to newcomers.[5] (SEE THE SIDEBAR "DEFINING ORGANIZATIONAL CULTURE" for details on how we define culture.) Our survey results show that 87% of teams that improved their efficiency and decision quality with AI also improved their collective learning.

AI implementations influence both what teams learn and how learning occurs. French energy company Rexel, for example, designed its Next Best Offer tool for vendors to recommend upselling or cross-selling to clients based on their specific circumstances. The initial rollout of the tool had mixed success: Some vendors almost always used the tool's recommendations, while others seldom did. The AI team working on the tool discovered that a vendor's tenure determined its use of the tool. Newcomers, who had few ideas about what to offer next, were glad to have it. Veterans didn't need the tool's advice, but it turned out that they were also glad to have it, albeit for a different reason than the newcomers.

New vendors had been pressing the veterans with requests for advice and support. As the tool became more effective, they stopped doing so. According to Nathalie Wright, Rexel's group digital and IT director and Nordic region general manager, one veteran gave her this feedback on the tool: "I do not learn anything from it, but I understand that if I say 'yes' or 'no,' 'good' or 'not good,' then that will help new people to do the job, and they will stop coming to me every time, asking me for advice." Veterans seemed more invested in training the tool than in training the newcomers. Eventually, Rexel began using the tool explicitly for vendor training (while preserving its use as a recommendation engine).

DEFINING ORGANIZATIONAL CULTURE

Organizational culture exists on at least three levels: how things are done in the organization, the espoused values that drive and govern those behaviors, and assumptions that could explain discrepancies between behaviors and publicly stated values.[i] A toxic culture, for example, might reflect a large discrepancy between how things are done and the values leaders publicly espouse. As former Stanford University professor Joanne Martin observes, "Only a small part of an organization's culture consists of issues and perceptions that people see clearly and agree on. The rest is characterized by incompletely understood conflicts between groups; inconsistencies between, for example, what people say they value and what they do; ambiguities about what frequently used phrases and goal statements actually mean; and irreconcilable paradoxes and contradictions."[ii]

An organizational culture may include inconsistencies but reflect stability. MIT professor Edgar Schein contends, "A total organization can have a culture if it has been a stable group for some period of time, and every subgroup within that organization can have a culture of its own if it has its own stable history."[iii] In an organizational culture, groups learn shared assumptions that inform behavior patterns that are passed on to new group members. At one level, culture includes what is learned and assumptions about what is (and is to be) valued.

The Rexel Next Best Offer example illustrates several ways in which learning strengthens AI adoption, team effectiveness, and team culture. When newcomers used the AI recommendation engine, they made better decisions than they would have without its advice. Veteran team members helped make the tool more useful by adding their accumulated knowledge to it; teaching the tool promoted a culture of AI use.

Effective Use of AI Clarifies Responsibilities

In other situations, AI-derived knowledge even helps experts improve their skills. Slawek Kierner, senior vice president, enterprise data and analytics, at Humana, explains how pharmacists in the health care company's call centers used AI to improve how they handle interactions with customers: "We started with this emotional AI — essentially a software piece that listens to the conversation of our pharmacists at a call center. It picks up emotional signals in this conversation and then suggests what the pharmacist could do to provide a better experience for the member." Kierner notes that adopting this software required time, training, and confidence-building. His team subsequently "found a set of innovators and showed that those that use it actually end up with more calls with satisfied customers and a higher Net Promoter Score. That, of course, then results in better service and better care for the member, which is the unifying force." It took effort for managers to overcome cultural barriers and cultivate AI use. By training users and engaging advocates, along with other means, Humana carefully avoided culture rejection that this new tool could have sparked.

Pharmacists who used the tool came to a new understanding of how to execute their role. They learned something about themselves, their customers, and how to handle customer calls. Our survey findings show that this is a common result of effective AI implementations. Among those who reported increases in efficiency and decision quality from their AI implementations, 65% saw improved clarity of roles.

Effective Use of AI Affects Collaboration

The increased efficiency and decision quality from AI implementations frequently lead to improved collaboration. Among respondents who saw an increase in efficiency and decision quality from AI, 78% reported improved collaboration. Sander Stomph, former head of operational excellence at the Dutch airline KLM, offered an example from the airline industry. When a passenger arrives at the airport but misses their flight, the airline must offload that person's luggage from the airplane for compliance and security reasons. This time-consuming requirement often delays flights, creating work for employees and annoying customers. KLM uses AI to predict which passengers are most likely to put the airline in that position. Since their bags are more likely to get pulled from the plane, their luggage is loaded last, making it easier to pull it from the cargo hold.

KLM managers realized that they could make the unloading process even smoother by putting the same large red tag on the late-arriving luggage that they affix to VIPs' luggage, which is also loaded last. Stomph says, "Now, if you're late or if we think that you're going to show up late, we're going to give you a VIP luggage tag."

"It has been a huge benefit for us to see the teams starting to pick up valuable work that they, in essence, did not have the bandwidth for prior to the implementations that we're releasing."

SIDNEY MADISON PRESCOTT
Global head of intelligent automation, Spotify

With an AI assist, KLM's crew and maintenance teams seamlessly work together to fulfill the common goal of an on-time departure. Pilots don't have to delay departures as often; flight attendants don't have to pacify frustrated passengers as often; and baggage handlers speedily and comfortably unload only the necessary cargo. This prediction-based process helps align teams, enabling them to enjoy better coordination throughout the departure process. KLM's ability to predict which bags will need to be offloaded during the departure process effectively became learning which bags they will need to offload. These predictions or lessons learned led to better coordination among different groups and thus to more satisfied customers.

Overall, 59% of respondents directly involved in AI implementations reported improved team collaboration due to their use of AI. That number increases to 78% among those respondents who also saw improvements in efficiency and decision quality after using AI. Amy Adams, senior director of global CRM and martech strategy at McDonald's, notes, "As we work to elevate McDonald's customer experience, we are using advanced analytics in a more advanced, agile way. This data allows us to better understand customer needs and expectations, enabling us to deliver the most relevant experience. We've also developed a global test-and-learn practice that allows us to better anticipate what will resonate with customers by testing various hypotheses. We've been building this new way of working and muscle over the last few years, and this capability has really motivated and influenced the organization to work cross-functionally in a different way than we had ever done previously."

Effective Use of AI Improves Morale

Among teams that improved their efficiency and decision quality with AI implementations, 79% reported an increase in morale. For example, Swedish fast-fashion retailer H&M Group experimented with different ways of using AI to help price products for end-of-season sales. It tested scenarios in which humans priced items, an algorithm priced items, and a human and an algorithm worked together, with the human evaluating and tweaking the algorithm's decisions. The combination of human and machine worked best, and the retailer's employees welcomed the technology. "Everybody loved it," recalls Arti Zeighami, former chief data and analytics officer at

H&M Group. "They said, 'This makes me more precise. It makes me sharper. It helps me make better decisions. It makes my work more fun.'"

At global exchange operator Nasdaq, employees appreciate how efficiencies from AI let them change their focus. Douglas Hamilton, Nasdaq's associate vice president, artificial intelligence, describes the stock exchange's successful effort to scan prospectuses for useful information that can benefit clients. "Historically, it would take an analyst anywhere between 40 and 90 minutes to grab a document, read through it, figure out if it contained certain types of information that the clients would find interesting, assess where that information was, and get it into the system," Hamilton explains. Now, with the help of artificial intelligence, Nasdaq processes 6,000 documents every three minutes. The time saved is an obvious financial boon. Less obvious, however, is the resulting improvement in morale: Hamilton notes that team members who previously devoted hours to scanning reports "were quite pleased, because now they get to do new and exciting and interesting things on a daily basis instead of the same old thing every day."

Dave Johnson, chief data and artificial intelligence officer at pharmaceutical and biotechnology company Moderna, echoes the point. "Taking non-value-add work off people's plates certainly increases morale," he says. "We're a company that believes in giving people a lot of responsibility. And so what often happens is that folks will come to us and say, 'Look, I'm doing this activity over and over. I would really love some help to automate this process.' And so, in that case, they're thrilled. They don't want to be looking at some screen of data over and over again. That's not why they got a Ph.D. They want to be doing something insightful and creative."

Similarly, Spotify's Sidney Madison Prescott, global head of intelligent automation, observes that the digital music service's efficiency gains via AI have enabled employees to make time for "all of the value-added work that previously was on the back burner." She adds, "We typically have a large amount of innovation projects that are either sitting in the backlog, in flight, or potentially delayed to give priority to more critical items. It has been a huge benefit for us to see the teams starting to pick up valuable work that they, in essence, did not have the bandwidth for prior to the implementations that we're releasing."

Prescott adds that their ability to focus on higher-value tasks made their work more personally rewarding and meaningful.
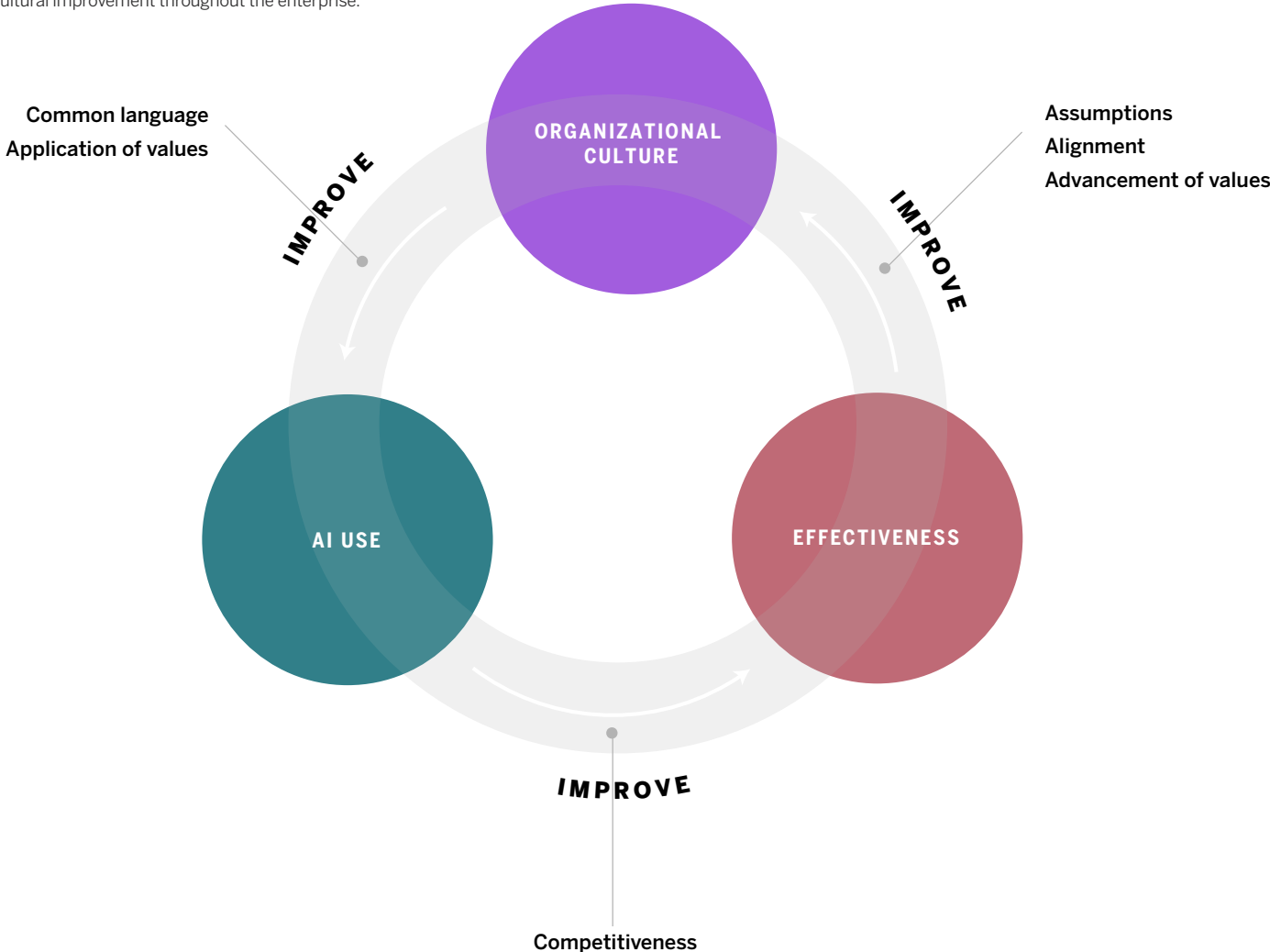
Improved morale need not come at the expense of reducing value for the company or its customers. David Galinsky, senior director, customer data and analytics strategy at McDonald's, is keenly aware of that potential pitfall. He says, "The struggle is, too often companies focus on shiny things like AI and ML because they are such hot topics. Companies instead should strive to deliver the best possible customer experience. That experience will

be facilitated, of course, by a strong technology foundation." The fast-food giant ensures that employees are not "so eager to do something really cool and innovative to make ourselves look good but that doesn't have the value back down to the customer."

While some survey respondents observed gains in morale even when AI implementations failed to improve efficiencies and decision quality (21%), far more observed gains in morale when their AI implementations were effective (79%). Most companies are managing the risk of shiny objects, at least with respect to AI.

FIGURE 5
The Organizational Culture-Use-Effectiveness Dynamic

Improving each component can lead to a virtuous cycle of cultural improvement throughout the enterprise.

Common language
Application of values

IMPROVE

ORGANIZATIONAL CULTURE

Assumptions
Alignment
Advancement of values

IMPROVE

AI USE

EFFECTIVENESS

IMPROVE

Competitiveness

Organization-Level Cultural Benefits

The Culture-Use-Effectiveness dynamic is different at the organizational level than it is at the team level. FIGURE 5, PAGE 12, shows the C-U-E dynamic at the organizational level: Organizational culture can improve AI adoption, which in turn improves organizational effectiveness, which in turn improves organizational culture.

Broad Use of AI Requires a Common Language

At PepsiCo, executives view AI as a strategic capability. They also acknowledge that making full use of that capability goes hand in hand with strengthening the company's culture, says Colin Lenaghan, global senior vice president, net revenue management, for the food and beverage multinational. "PepsiCo is very much an organization and a culture that learns by doing," he explains. "We view AI as a very strategic capability that helps us solve strategic problems. We are making quite an investment in bringing literacy of advanced analytics across the broader community. We are starting to elevate that literacy among senior management. This is clearly something that has to be driven from the top. It needs cultural change. Over time, we intend to strengthen our AI capability and hopefully the culture at the same time." Pervasive AI literacy enables communication through a shared language.

A shared language improves communication about (and the identification of) new opportunities. At Levi Strauss & Co., Paul Pallath, the clothing company's global technology head of data, analytics, and AI, agrees that broad-based adoption of AI demands culture change across the organization. "We need to change the overall culture of the organization, and that depends on getting our people to think in terms of AI," he says. "If you don't start thinking in that direction, you're not going to ask the right questions that can eventually be solved with AI. Thinking in terms of AI — such as asking what solutions might be possible with AI or whether AI could be applied in a particular situation — unveils new opportunities." Collective thinking in terms of AI depends on a shared language.

Changing the culture to make full use of AI across the enterprise is both necessary and difficult, says Chris Couch, senior vice president and CTO at Cooper Standard, which provides components and systems for diverse transportation and industrial markets. "Good companies are going to develop people in all functions, whether it's finance, purchasing, manufacturing — you name it — that have some sense about where AI tools can be applied. Bad ones won't," he explains. "While AI will continue to be something special that only certain experts use, there's going to be a democratization in the next 10 years. It's one of those things that is not easy to prepare for, but we have to prepare for it. Otherwise, we're going to get displaced." When the organization depends on AI literacy, those who lack literacy add discord.

"We need to change the overall culture of the organization, and that depends on getting our people to think in terms of AI."

PAUL PALLATH
Global technology head of data, analytics, and AI, Levi Strauss & Co.

Innovating With AI Improves Competitiveness

Using AI doesn't merely help with effectiveness at the team level (such as by improving efficiency and decision quality); managers can also use AI to improve an organization's competitiveness. For instance, innovating new processes with AI appears to enhance a company's ability to compete with both existing and new rivals. We compared respondents who said they are using AI primarily to innovate existing processes with those who agreed that their company is using AI primarily to explore new ways of creating value. (SEE FIGURE 6.) Respondents who agreed that they are using AI primarily to explore new ways of creating value were 2.5 times more likely to agree that AI is helping their company defend against competitors and 2.7 times more likely to agree that AI is helping their company capture opportunities in adjacent industries. Exploration with AI is correlated — to a greater extent — with improved competitiveness than exploitation with AI.

Organizations can use AI to accelerate these innovation processes for existing processes. Moderna rapidly developed a widely used COVID-19 vaccine with the help of AI. Johnson says Moderna focuses on "having a smaller company that's very agile and can move fast. And we see AI as a key enabler for that. The hope is that it helps us to compete in ways that other companies can't. That is certainly the intention here."

Moderna began automating work that had previously been done by humans, including testing the design sequence of messenger RNA (mRNA) used in vaccines that protect against infectious diseases. "One of the big bottlenecks was having this mRNA for the scientist to run testing," Johnson says. "So we put in place a ton of robotic automation, and a lot of digital systems and process automation and AI algorithms as well. And we went from maybe about 30 mRNAs manually produced in a given month to a capacity of about a thousand in a monthlong period, without using significantly more resources and with much better consistency in quality." As a result, employees at Moderna can evaluate many more options for innovation than before; the company's rapid development of the COVID-19 vaccine was due, in part, to using AI to rapidly test mRNA design sequences. Using AI accelerated innovation, increasing the company's ability to compete with much larger companies.

Organizations that feel prepared to **defend against competitors** from adjacent industries primarily use AI to...

24% — Improve existing processes

59% — Explore new ways of creating value

2.5x increase
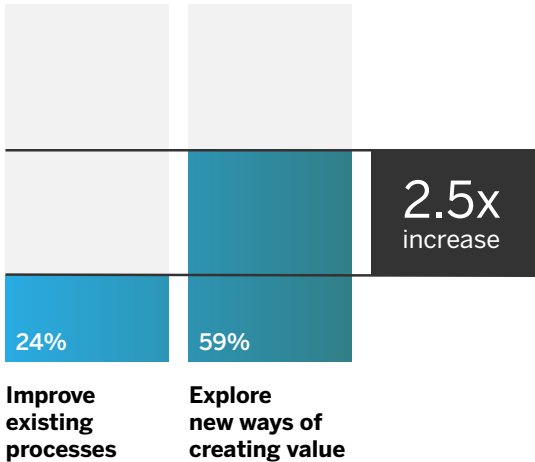
Organizations that feel prepared to **capture opportunities** from adjacent industries primarily use AI to...

23% — Improve existing processes

61% — Explore new ways of creating value

2.7x increase
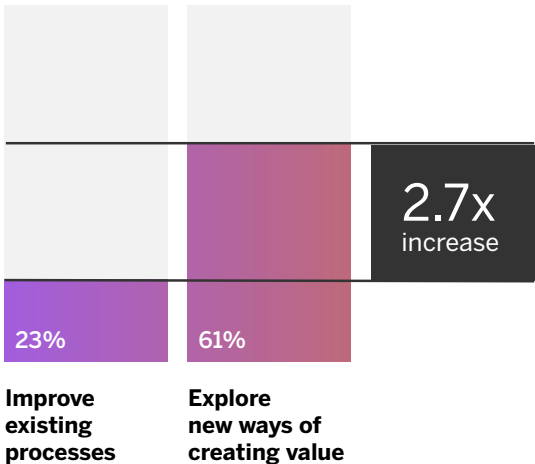
(percentage of respondents who have been closely involved with a project team whose workflow used AI)

But speed is far from the only potential benefit of AI. Amit Shah, president of floral and gift retailer 1-800-Flowers, observes, "If you think about what differentiates modern organizations, it is not just the ability to adopt technologies — that's become a table stake — but the ability to out-solve competitors in facing deep problems.

"When I think about AI," Shah continues, "I think about our competitiveness on that frontier. Five years down the road, I think every new employee that starts out in any company of consequence will have an AI toolkit, like we used to get the Excel toolkit, to both solve problems better and communicate that better to clients, to colleagues, or to any stakeholder." Being a "company of consequence" in the future may require all employees to work with AI to "out-solve" competitors with new ways of creating value.

Using AI to Reassess Key Assumptions, Set New Objectives, and Realign Behaviors

Improving organizational effectiveness is not itself an end goal. After all, organizations can become more effective at the wrong activities: They can achieve misguided objectives, reinforce outdated values, or compete against irrelevant organizations. When CBS's Subramanyam asked her AI team to assess whether executives had the right assumptions about what factors lead to a successful TV show, she was using AI to reassess what "being effective" means in her organization. Using AI can help a company not only achieve effective outcomes, but also change assumptions about what counts as an effective outcome.

Many executives revealed that their AI implementations were helping them develop or refine strategic assumptions and improve how they measure performance. These changes often lead to shifts in their KPIs. Indeed, our survey found that 64% of the organizations that use AI extensively or in some parts of their processes and offerings adjust their KPIs after using AI. As Pernod Ricard's Calloc'h says, "We are planning to monitor new KPIs because AI is helping us measure performance more precisely. For example, one algorithm helps us measure the performance of each marketing campaign in isolation, whereas before, campaigns were running on various media at the same time, and it was impossible to isolate the contribution of each media component. Our ability to isolate and better measure a campaign's performance allows our marketers to be more performance-focused and to make better decisions."

KLM, for example, used AI to develop a new measure to help make complex financial and operational trade-offs involving crew scheduling and passenger delays. "Rather than optimizing for on-time performance," Stomph says, "we quantified what it takes not to deliver as promised across different departments. That required us to quantify things that you cannot find in your P&L." The measure looks at the cost of various situations, such as a two-hour delay to a crew member's schedule if that person is switched from a flight landing at 2 p.m. to one landing at 4 p.m. "What's the price of this?" he asks. "If you want to run an optimization across different departments, you need to create a single currency to unify all of these players. And the single currency we created was nonperformance cost." The single currency enabled everyone to make decisions based on the same criteria instead of relying on individual judgments with uncoordinated decision-making criteria.

KLM's nonperformance measurement led to changes in a cascade of decisions, including when to swap out crew members. "What I find most intriguing about the solutions we have," Stomph says, "is even if you will never use the tool, that process of bringing these teams together has been very valuable from a financial and a morale point of view."

Another way that AI implementations can help organizations revise assumptions about effective outcomes is to enable workers to outperform existing KPIs so consistently and so thoroughly that new KPIs are called for. "People see that they are outpacing the KPIs that they agreed upon because of AI/ML," Levi Strauss's Pallath says. "Based on how AI/ML is delivering value to the enterprise, the goalpost keeps shifting."

New success measures become necessary when AI-based solutions make possible new performance benchmarks, obsolesce legacy KPIs, and/or reveal new drivers of performance. Changes in KPIs often accompany shifts in organizational behavior. Indeed, organizations that revise their KPIs because of how they use AI are more likely to see improvements in collaboration than organizations that don't make AI-driven adjustments to their KPIs. Sixty-six percent of respondents who agreed that their KPIs have changed because of AI also saw improvements in team-level collaboration.

Significant Change, Advancing Values

Achieving these cultural benefits, particularly at the organizational level, can require considerable change. As Pernod Ricard's Calloc'h describes it, "Some processes get changed in a significant way because the data and the processing of the data through AI give us more certainty about some of the elements. You can make quicker decisions live, during a meeting. You can iterate more frequently. And you don't have to wait six months for the return on investment of a campaign to adapt the new wave or to scale it. In fact, you can have more elements. So yes, it's significantly changing processes of decision-making." Using AI can accelerate the quality and pace of organizational life extensively, requiring considerable change.

But our research suggests that even when organizations make substantial changes associated with AI, culture does not suffer — quite the opposite, in fact. For example, implementing AI is associated with better morale in general. But when combined with business process change, the effects are even more pronounced: The greater (in both number and extent) the change, the greater the

improvements in morale. To wit, 57% of organizations that made few changes in business processes reported an increase in morale, while 66% of organizations that made many changes reported an increase in morale. (SEE FIGURE 7.) The more that an organization uses AI, the more opportunities there are for cultural benefit.

A strong culture helps encourage AI adoption, and adopting AI can strengthen organizational culture. This cyclical relationship can build through numerous individual process improvements to enhance the overall organizational culture. Zeighami says that when he introduced AI at H&M, he wanted to avoid the common practice of "making one part of your organization become very good at that, and then the rest are still lagging behind."
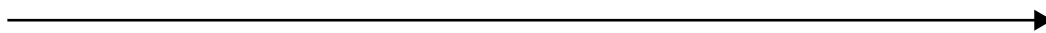
"It's almost like putting a tire on a car," he explains. "You don't screw one bolt really hard and then do the next one. You just do every bolt a little bit and then tighten everything up. And I think that has been a really good approach for us." Zeighami deployed AI for many company processes, including fashion forecasting, demand forecasting, and price management, along with more personalized customer-facing initiatives. "It's been a very vast approach," he observes. "Not going too deep, but a little bit in every area to enhance and elevate and change the mindset for everybody so we can become data-led, AI-led, going forward. And we have seen a lot of interesting

FIGURE 7
Improving Morale, Despite Significant Change

Morale improves the more processes change.

45%	57%	66%
No changes to any business processes	**Changes to few** business processes	**Changes to many** business processes
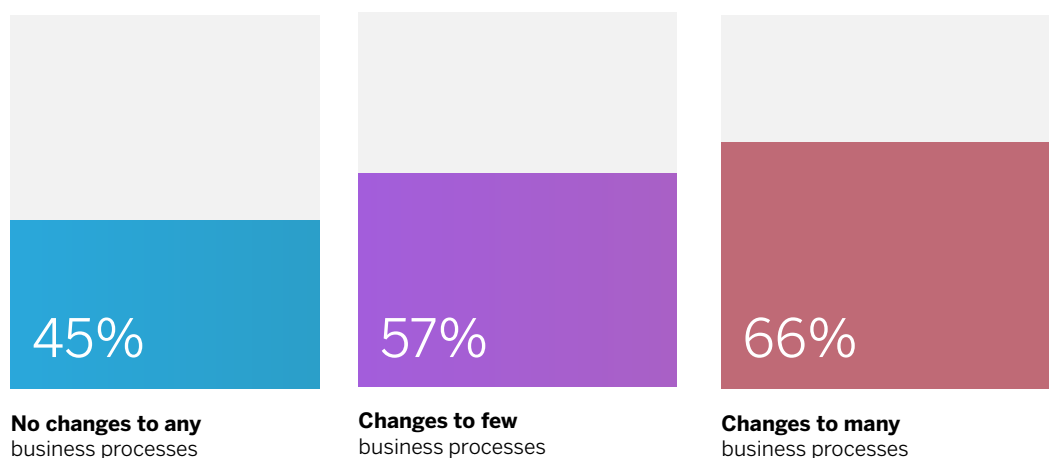
No Change ⟶ Many Changes

(percentage of respondents reporting an increase in team morale since implementing AI)

results. In some areas we even see that working with the AI product has changed people's way of working with other stuff, because there's a proximity impact on the business." Once an organization introduces AI widely, it can come back and improve not only individual processes but the interfaces between those processes, strengthening the organization as a whole.

Through repeated application and managerial attention, the virtuous cycle between organizational culture and AI use can result in a more cohesive organization, consistently reflecting its desired strategic values. As a result, responsible AI adoption transcends legitimate issues around minimizing bias (in product design, promotion, and customer service) and manipulation (of customers, pricing, and other business practices). Instead, AI becomes a managerial tool to align microbehavior with broader goals, including societal purpose, equity, and inclusivity.

For example, JoAnn Stonier, chief data officer at Mastercard, reports that the financial services corporation launched a data responsibility initiative in 2018 that involved privacy and security issues and included "working hard on our ethical AI process." Many of her workplace conversations about AI, she adds, "center on minimization of bias as well as how we build an inclusive future." But the conversations don't stop there, she says. "The events of this past year have taught us that we need to pay attention to how we are designing products for society and that our data sets are really important. What are we feeding into the machines, and how do we design our algorithmic processes, and what is it going to learn from us?

"We understand that data sets are going to have all sorts of bias in them," she continues. "I think we can begin to design a better future, but it means being very mindful of what's inherent in the data set. What's there and what's missing?" These discussions help articulate values around which the organization can align, she says. "The whole firm is really getting behind this idea of developing a broad-based playbook so that everybody in the organization understands how to think about inclusive concepts."

Pervasive change is complex. As founding director of the Notre Dame-IBM Technology Ethics Lab, Elizabeth

Renieris is acutely aware of the complexities of these conversations and how they continue to evolve. "The ethics conversation in the past couple of years started out with the lens very much on the technology," she says. "It's been turned around and focused on who's building it and who's at the table — those are the really important questions.

"The value of ethics," she adds, "is, rather than looking at the narrow particulars and tweaking around the edges of the specific technology or implementation, to step back and have that conversation about values to ask, 'What are our values, and how do those values align with what it is that we're working on from a technology standpoint?'" Stepping back may cause discomfort. But through these conversations, AI can have a profound effect on organizational culture.

Conclusion

Our research demonstrates a strong, multidimensional link between AI use and organizational culture. Clearly, AI use depends on company leaders establishing a culture that allows AI solutions to thrive. But it's also clear that flourishing AI solutions can strengthen organizational culture at both the team and organizational levels. As more companies look to build strategies around AI, understanding and managing the interplay between culture, AI use, and organizational effectiveness (the C-U-E dynamic) becomes critical to their success.

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