



Reinventing work

**A sequel to the Rise
of the Humans series**

KPMG International

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Foreword



By Robert Bolton

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This sequel to our Rise of the Humans series comes at a historic moment as the world contends with life- and-work altering COVID-19 impacts. No one is spared by it. While our intention was to publish this sequel in March, we deemed it appropriate to delay publication pending our assessment of how the pandemic's impact should best be reflected in this publication.

What we learned quickly though is that as the world races toward solutions, our overarching message around the basic principles of reinvention of work remains unchanged—if anything, it becomes more significant. As we have stressed in this report and the previous Rise of the Humans publications, there is no time to lose to embark on the immense challenge of reinventing the world of work and adopting a digital mind-set that creates a humane culture from end to end as machines will proliferate the workplace.

What has changed is the timeline to reinvent work. The transformation timeline has dramatically collapsed—shifting from five to eight years to as little as months down the road! COVID-19's impact on the global economy and its remarkably rapid reconfiguration of the world's workforce—remote work, reduced business travel, flexible work schedules, automation of services, and more—is providing us with an exceptional and unexpected glimpse of the future world in a much condensed timeframe.

As we note in this publication, the future's required workplace mind-set will emphasize experimentation, agility, and in-the-moment learning—replacing highly planned strategies whose traditional long lead times may prove too inflexible in the digital era (and post-COVID-19 world, if there is such a thing). And as we are witnessing, the current situation indeed is forcing businesses to experiment, improvise, and innovate in real time to remain viable.

KPMG specialists have identified four phases that organizations will move through as they respond to COVID-19: *Reaction*, *Resilience*, *Recovery*, and *New Reality* (see table below for a quick description). What we are already seeing is that organizations, industries, and geographies are moving through, and planning for, the phases at different rates. Some are already working toward a 6-to-12-month transformation timeline, reskilling workers and advancing automation initiatives for when we emerge from the current economic downturn or when the curve has truly flattened.

Organizations such as retail, finance, and health are required to move boldly forward amid today's massive workforce disruption, hopefully turning adversity into an opportunity to reinvent work. For instance, healthcare will need to drastically improve utilization of artificial intelligence (AI) and predictive analytics so it can be better prepared in the future, if faced by similar challenges, whether it be through better forecasting capabilities of infections across the globe, through identifying critical linkages in biology and genetics, to leveraging robots for select patient care and sanitation efforts to limit exposure of pathogens to humans. In doing so, they are positioning themselves for competitive advantage—and indeed continued existence—in the future that awaits.

Via our digital skills training platform, Connected Learning, we have already seen evidence of a dramatic increase in the number of major companies in an array of sectors that are scrambling to reskill workforces for the digital future. These organizations are in effect moving themselves a step closer to the reinvention of work that lies ahead.

Today's unforeseen threats and challenges hold lessons and invaluable insights for the future of work. There is no escape from the hard work of strategic reinvention if organizations want to capitalize fully on the competitive advantages that AI promises. The time for action is now (or for many of us, we may wish we had taken more action yesterday).



Reaction

Responding to immediate challenges



Resilience

Managing through uncertainty



Recovery

Resetting and identifying opportunities



New Reality

Adapting to a new world

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If the digital future is to be our home, then it is we who must make it so. ”

—Author Shoshana Zuboff in
*The Age of Surveillance Capitalism*¹

¹ *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*, Shoshana Zuboff, 2019





Introduction

The executive team of a global organization is gathered around a boardroom table to discuss the future and the revolutionary impact that artificial intelligence (AI) could have on their business.

“How do we understand what will happen to our organization and workforce if we are to survive into the future?” the CEO asks the leadership group.

Amid the debate over whether AI will eliminate or create jobs—and queries about what competitors are doing—attention turns to the chief design and innovation officer, who warns her colleagues that the challenge ahead will be an exercise in *creativity* and *design*, with enormous and unprecedented choices to be made. The CxOs are eager to hear more, so she explains what they are up against:

“Imagine your organization is made up of toy building blocks.

You’ve built it according to the picture on the box—placing every block in precisely the right place. The resemblance to every competitor’s castle is obvious. But someone will soon come along and demolish your building block castle, leaving nothing but a pile of blocks that will need to be replaced by modern, new blocks of various shapes, sizes, and colors. You look at the top of the new building block box, and this time there is no picture, just two words—‘Build Something.’ That’s the challenge before us.”

Silence momentarily ensues until the CEO offers a simple concluding directive to his team: “It is now time for us to invent our future.”

The future of this organization—and countless others around the globe—is indeed unwritten. As author and historian Yuval Noah Harari warns in his book *21 Lessons for the 21st Century*:² “We have no idea what the job market will look like in 2050. It is generally agreed that machine learning and robotics will change almost every line of work—from producing yogurt to teaching yoga. However, there are conflicting views about the nature of the change and its imminence.”

“

Build Something.

That’s the challenge before us.”

”

This concept resonates now even more with the tremendous COVID-19 impacts. Organizations around the world have been disrupted virtually overnight and there is no going back, just building new.

² 21 Lessons for the 21st Century, Yuval Noah Harari, 2018

Businesses pursuing enhanced growth, productivity, and competitive advantage in the digital era and the New Reality in life with COVID-19 will need to reinvent the world of work—adopting a digital mind-set that creates a humane culture from end to end as machines continue to proliferate in the workplace and overhaul the traditional ways of working before 2020. Organizations positioning themselves for success amid this disruption and digital transformation will reinvent work from the ground up, driving productivity in a way that maintains a sharp focus on people and values.

The critical question that ultimately looms is “What kind of future do we want to create?” Beware of every transformation journey’s fork in the road: If we pursue the future growth challenge simply by driving for higher productivity in collaboration with digital tools, AI, and robotics, we could risk creating dystopian workplaces, especially now that the organizations have transitioned to a more virtual world.

As we observed in KPMG International’s Rise of the Humans 3,³ the task-level impact of AI means that traditional jobs are being “atomized”—disintegrated into specific granular tasks and functions that can be divided among machines and humans.

Adopting AI to simply take on bits and pieces within today’s job functions, however, will produce no significant productivity boost.

At the same time, the work atomization phenomenon’s impact on humans in the workplace—and ultimately on entire destabilized workforces—will create heightened uncertainty and disruption to traditional career paths, as we are seeing already with jobs across the board such as underwriters, bankers, accountants, and just about any role in corporate back offices. Employees in a potentially dystopian scenario could be left to pick up the pieces in the aftermath as atomization and the takeover of AI and robotics redefine entire jobs and the need for full-time workers. Humans might increasingly be needed simply to complete

microtasks in collaboration with machines, rather than filling traditional jobs and roles.

What we will uncover:

- The need to **reinvent work and workforces**
- The basic tenets of a **digital workforce mind-set**—an innovative perspective that will be critical in the race to build thriving, sustainable enterprises featuring flexible workplaces that are designed to survive the inevitable waves of disruption ahead
- **Examine the benefits of workforce shaping** in creating a purpose-led culture where learning is constant and evolving
- Share some **words of caution** about the dangers of an emerging “quantified workforce” if not balanced within an ethical framework applied to work reinvention

Productivity paradox

As tasks are automated, roles and processes must be redesigned to realize the transformational productivity potential of technology and avoid simply automating inefficiency.



Source: “A millennium of macroeconomic data,” Thomas, R and Dimsdale, N, Bank of England OBRA dataset, 2017

³ “Rise of the Humans 3,” KPMG International, 2018



Reinventing work from the ground up

Many studies today concerning AI's impact on the workforce are based on principles of macroeconomics. They provide a "top-down" view of what the future may hold as intelligent machines redefine processes and impact efficiency. But there is no consensus on just what the fast-emerging future will ultimately look like as humans and machines occupy the same work environments, especially with the added complexities of COVID-19. So who to believe?

The potential answer? No one. The organizational challenge is to rebuild or reinvent work from the ground up because the task-level impact of AI requires the atomization of jobs. Traditional work is increasingly being broken down into smaller and smaller tasks or microtasks amid automation and machine learning's dramatic arrival into the workforce. This will likely become more pronounced now as organizations look to automate and digitize to avoid unnecessary human contact with potential pathogens—it has become a safety imperative.

As the division of labor between machines and employees unfolds, AI is poised to assume not just tedious, repetitive, low-value job functions but also, increasingly, cognitive tasks traditionally handled by humans, such as medical diagnosis, financial loan approval, legal discovery, and much more. With humans taking on whatever tasks remain, the result may be an overall reduction in the number of people needed amid diminishing roles and workloads—both within individual businesses and across society at large.

KPMG International's global Future of HR 2020 insights⁴ and the 2019 Global CEO Outlook⁵ report opposing viewpoints on whether or not AI will create or eliminate more jobs: 65 percent of CEOs believe AI will *create* more jobs than it will eliminate, yet 60 percent of CHROs believe AI will *eliminate* more jobs than it will create. Another recent KPMG member firm study, *Living in an AI World*,⁶ which surveyed over 750 U.S. business decision-makers with at least a moderate knowledge of AI in their industry, reported that two in five employees have expressed concerns about potential job losses as a result of AI implementations, jumping to 62 percent specifically within the retail industry. If this same population were asked today, this number would likely be even higher, reflecting the significant impact of COVID-19.

⁴ "Future of HR 2020: Which path are you taking?," KPMG International, 2019

⁵ "Global CEO Outlook – Agile or irrelevant," KPMG International, 2019

⁶ "Living in an AI World: Achievements and challenges in artificial intelligence across five industries," KPMG LLP (U.S.), 2020



“

**Plans are worthless, but
planning is everything.”**

—34th President of the United States of America,
Dwight D. Eisenhower

Thus for organizations and their workforces, the implications of job atomization are clearly significant, if not historic, and include momentous challenges—and opportunities—for businesses that hope to truly enhance productivity. The emergence of “boundaryless” functions and, in time, functionless enterprises, will likely create the need to reshape work at the task level—reconfiguring organizations and radically transforming their job functions and processes, rather than simply applying AI to existing functions and tasks. Experts from the Institute for the Future (IFF)⁷ predicted that 85 percent of jobs that may exist in 2030 have not been invented yet.

At the same time, the need to reinvent work this way presents a historic opportunity for skilled employees to play to their strengths while unleashing new levels of productivity and value to employers.

“The future of work is about rethinking the way work gets done,” global technology research firm, International Data Corporation (IDC) states in its recent Worldwide Future of Work 2020 Predictions⁸ report. “It is a fundamental shift in the work model to one that fosters human-machine collaboration, enables new skills and worker experiences, and supports an environment unbounded by time or physical space.”

Work transformation is critical for effectively scaling digital transformation initiatives that will increase business agility, worker productivity, and operational efficiency, IDC adds: “Most importantly, it will drive greater stakeholder (including employee) engagement and innovation, enabling your organization to establish competitive differentiation in a dynamic business environment.”

Some future-focused businesses are wasting no time in moving boldly forward. For example, insurance and legal professions illustrate the fast-emerging fluidity in work structures and the way tasks are being performed as AI technology blooms. As we outlined in Rise of the Humans 3,³ traditional insurance underwriting can be highly automated by AI, but, as one KPMG member firm’s client observed, any reduction in traditional underwriting work has coincided with the emergence of a new role embracing both underwriting and adjacent disciplines such as risk consulting and product development.

“

The future of work is about rethinking the way work gets done. ”

—International Data Corporation (IDC)

⁷ Expert workshop held at Institute for the Future in Palo Alto, Institute for the Future California on March 23, 2017

⁸ IDC FutureScape: Worldwide Future of Work 2020 Predictions, Doc # US44752319, October 2019




Or take the legal professional. If a lawyer's tasks are atomized, it quickly becomes noticeable that many tasks can be automated from due diligence to research to billing hours, even interviewing. Lawyers' rates are often driven by the tremendous amount of effort required by paralegals and researchers to collect and categorize information. AI will continue to make its way into the legal profession.

According to a recent interview and article conducted by Forbes,⁹ a prominent U.S. lawyer goes as far as saying that in the future, not using AI may be viewed as legal malpractice if these lawyers continue to do everything by hand (increasing time and subsequently cost to the client) when it could be done by a computer. Yet there will be a number of legal disciplines that cannot be easily replaced by AI such as the understanding of people psychology, emotional intelligence and empathy, or the study of philosophy, critical thinking, etc.

AI is here to stay and grow, and the ethical challenge will be in how it is implemented and subsequently how a lawyer's job will be reorganized. As we continue to witness in our work with global firms, adopting AI to simply affect bits and pieces or the "arms and legs" of today's job functions will produce no significant productivity boost. Work must be fundamentally reorganized in ways that bring humans and machines into a sustainable collaborative work environment.

⁹ "Will A.I. Put Lawyers Out Of Business?," Forbes, 2019



The reinvention imperative

Working with KPMG clients in insurance, life sciences, healthcare, and telecommunications industries, as well as research with Imperial College at the KPMG Imperial College Data Observatory, reveals significant insights into the future of work.

The predominantly task-level impact of AI means that the reinvention of work will require integrating four vectors of change into a coherent whole that includes:



Automation of tasks

Such as processes in financial services mortgage approval, insurance industry claims handling, legal services research, healthcare diagnostics, and much more.

For example, forms are preloaded with information from existing knowledge and client relationship management systems prior to being sent to clients or manual data and information entry in supply and production line management is gathered through automated invoice scanning.



Reconfiguring of tasks

To exploit the power of humans and machines working together in a collaborative new environment.

For example, reinventing healthcare roles to exploit cognitive augmentation of functions such as nursing, diagnosis, pharmacy, and more or using voice assistants to capture, find and share important information in policing.



3 Reinvention of work structures

To establish new tasks and roles using AI—and unlock the potential for innovative new services to emerge as AI and humans work together. This requires reimagining the end-to-end enterprise value chain and operating model.

Pre-COVID-19, we already saw life sciences companies establish entirely new business units that focus on prevention and innovative management of chronic conditions. These ground-breaking “health services” propositions can combine wearable technology, AI, social media tools, and human intervention to ward off heart ailments, for example, or help diabetes patients via real-time blood sugar analysis and guidance. It is expected that more investment will be spent on outbreak predictions, epidemiology, and dedicated drug research in light of COVID-19.



4 The need to experiment

Is a critical success factor. Why? Because there is no playbook to follow. The future’s required mind-set will emphasize experimentation, agility, and in-the-moment learning—replacing a highly planned and considered approach whose traditional long lead times are likely to be too inflexible in the digital era and New Reality of life with COVID-19. This new perspective will, of course, include the need for change management that delivers buy-in and engagement from a workforce facing its own reinvention.

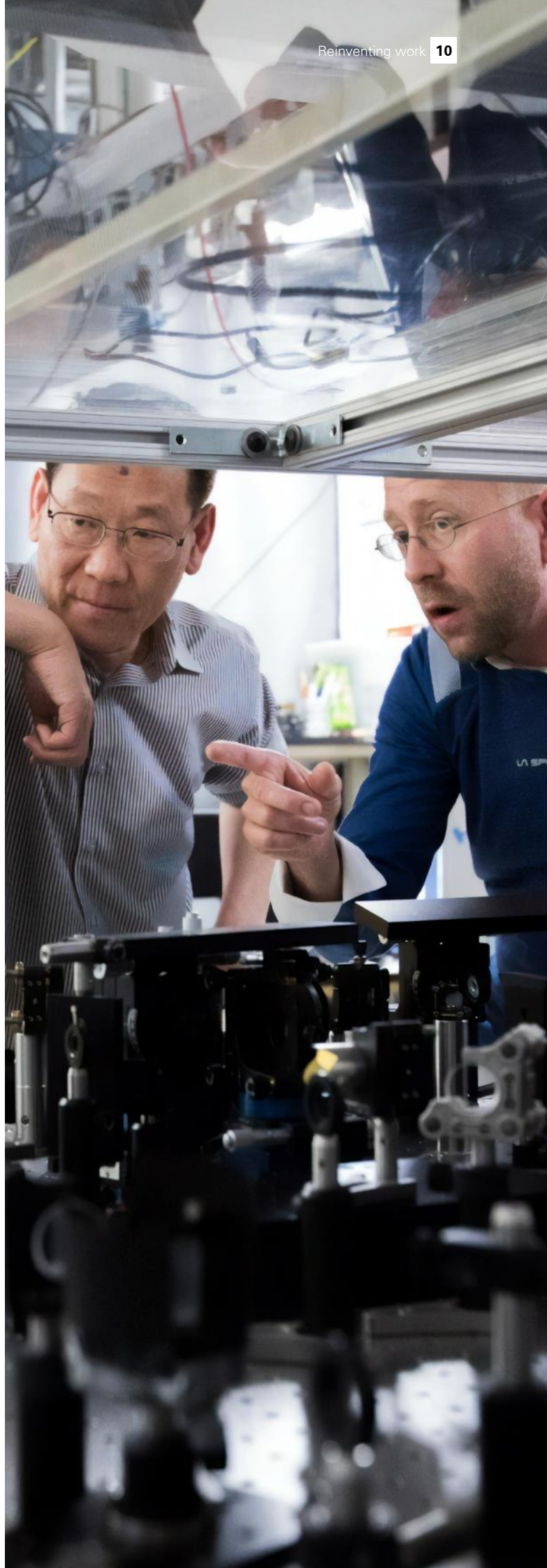
For example, an organization decides to stick with 90 percent remote working, using virtual reality to conduct conferences from home or tries new approaches to pushing ahead with technological adoption that had lagged before COVID-19.

Automating what is already there is only half the battle. Imagining what should be there is the other half.

This four-part *reinvention imperative* requires crucial new capabilities that will transform the enterprise from an end-to-end, outside-in perspective. Our experience in the deployment of AI reveals the importance of understanding things from a customer or end-user perspective and working back from there.

From our interactions with clients across the globe, we have seen that organizations that simply apply AI to *existing processes* consistently reveal much lower levels of satisfaction with outcomes, when compared to organizations looking more deeply at outcomes they require both now and in the future. This includes looking at the whole workforce and operating model, as well as granular details at the task level. Automating *what is already there is only half the battle*. Imagining what should be there is the other half.

Clients repeatedly ask us about the mind-set leaders will need for their organization to succeed in a disrupted world, and how best to forge an agile connected enterprise featuring a future-focused workforce. In short, how should they be thinking, perceiving, and responding during their digital transformation journey and in their response to the post-COVID-19 New Reality? The dilemma that needs to be reconciled demands both digital skills to deploy and manage AI and human skills to live and work with AI. The solution is a digital workforce mind-set—one that positions the enterprise for success as the work of humans and machines converges.



Applying a digital mind-set to work reinvention

“ It is not the strongest of the species that will survive, nor the most intelligent that survives. It is the one that is most adaptable to change. ”

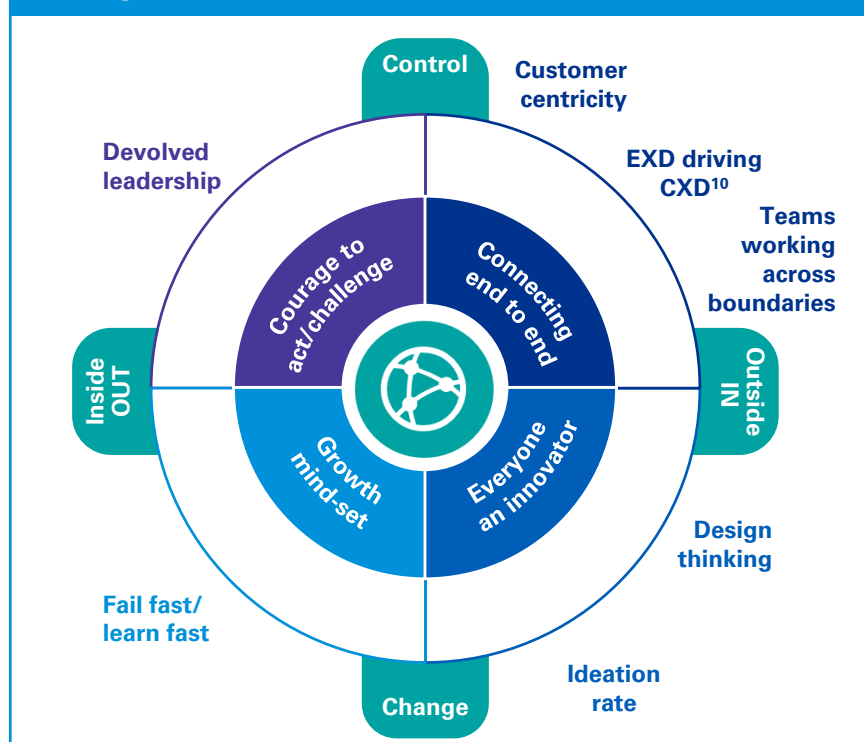
—Charles Darwin, naturalist, geologist, and biologist

What does a digital mind-set look like in solving the dilemma of implementing both the *digital skills* to deploy and manage AI and the *human skills* to live and work with AI?

It's about taking an “outside-in” and “inside-out” perspective that balances being aware of customer needs, the marketplace, competitors, and ecosystem of operation, as well as horizon-scanning for potential disruptors along with preparing internal capabilities to project into the marketplace. The control and change axis balances disciplined organization and control of the enterprise alongside an ability to change, innovate, and transform.

¹⁰ Employee experience design and customer experience design

The digital mind-set framework



A digital mind-set follows the following key principles while building new roles and tasks amid the deployment of AI and digital technologies.



Connecting the enterprise end to end and understanding along the way the impact of change on the enterprise value chain, required

outcomes, and customer experience. Research by KPMG International indicates that truly customer-centric businesses achieve three times the revenue growth of the average FTSE 100 or Fortune 250 company,¹¹ increasing awareness of the connection between employee experience and customer experience is critical, as is taking a more horizontal perspective that connects all aspects of the enterprise in the pursuit of desired customer outcomes. Tactics to accomplish this begin with the application of design-thinking techniques. We are seeing that future-focused businesses are shaping new operating models in which every part of the organization, from sales to the supply chain, is working with every other element to deliver against the big picture. It's also no surprise then that, according to the KPMG global Future of HR 2020 survey,⁴ 95 percent of HR executives view employee experience as a priority.



An innovative and flexible culture, or a growth mind-set, that encourages agility, collaboration, and change. This requires the

creation of a work environment in which roles can evolve and people can collaborate across role boundaries. Tactics here include instilling a strong "learning to learn" mind-set that maintains a focus on tomorrow as well as today, which will be critical to success. Learning in the flow of work should be a priority, the concept that learning needs to be designed, curated, and available/pushed to employees to be accessed on-demand at the moment of need. Further into the future, chatbots and machine learning will allow resources to engage with chat features to answer procedural questions, and provide content suggestions via instant message when the system recognizes the need for this information based on workflow activities.



Everyone in the organization has a productive role to play as an innovator regarding the breakdown of tasks between

humans and machines, the creation of new roles or jobs, the delivery of new products, and more. Innovation and experimentation is everyone's job and can no longer be expected to emerge only from leadership or R&D teams. Tactics here again include the application of design-thinking techniques in redesigning jobs and work across the enterprise end to end, and willingly engaging with the workforce to develop new approaches that improve control and balance in individual roles.

Tapping into crowdsourcing's potential to drive innovation should also be on the tactical agenda. We are seeing crowdsourcing techniques significantly increase among our clients who are embracing the innovation challenge. MIT Sloan Management Review (MIT SMR)¹² found that ideation rates (i.e., number of management-approved ideas per 1,000 active users) are correlated with company growth and net income, concluding that perhaps organizations that operate in an innovative spirit generate more ideas and the infrastructure/management to support that. MIT SMR explains, "When a corporate culture is designed not just to encourage innovation but to systematically nurture employee ideas, the results are dramatic. Companies like this boost employee participation in innovation challenges created by management, generate more actionable ideas, and then implement those ideas in a way that generates profitable growth. As a result, you can actually assess the level of innovation at a company on a quarter-by-quarter basis by measuring its ideation rate."



Everyone is a leader and encouraged to act and challenge, possessing autonomy and the

freedom to act, while being accountable for meeting business objectives. Tactics include ensuring everyone across the enterprise shares details and updates on priorities, projects, and progress, with a focus on interdependence among team members in new work structures. Speed will be of the essence, particularly during interactions that will promote customer relationships. This is even more critical as we now operate in more virtual environments—employees who are not empowered to execute independently and operate with limited oversight will disengage from distrusting employers and find a better employee value proposition.

“How well functions work together in large measure determines how effective a company will be at developing successful products and services.”

—MIT Sloan Management Review

¹¹ KPMG/Forrester Research 2016 and 2018

¹² "Are Innovative Companies More Profitable?," MIT Sloan Management Review, 2017

Implementing these digital mind-set principles could help lessen the challenges associated with the atomization of work, in the wake of pulling apart antiquated structures and ways of working to create new roles, tasks, and jobs. Understanding the traits and characteristics of a workforce and workplace with a digital mind-set helps chart the way to delivering the reinvention imperative.

We've consistently seen that AI deployment includes reconciling dilemmas between automating tasks and inventing new roles and jobs in a way that encourages consideration of what is possible and what can be created anew.

If an organization merely automates tasks within existing work and organizational structures, suboptimal outcomes tend to follow. These include poor customer and employee experience, complicated end to end processes, and increased costs. There is no escape from the hard work of strategic reinvention if organizations want to fully capitalize on the competitive advantages that AI can deliver. Traci Gusher, lead of AI and principal at KPMG LLP (U.S.), explains that organizations "need to look at AI as a strategic enterprise-wide initiative. It's not just about installing AI technologies. It's about using AI as a strategic lever to transform the business. And that requires building deep AI capabilities across the organization—both from the bottom up and the top down—across technology, people, data, and process."⁶

Forrester Research, in RQ 2.0: Assess Your Readiness for Artificial Intelligence, Automation, and Robotics,¹³ emphasizes that it's not emerging technology that will dictate the success of an organization's AI investments but how well firms address the people aspects. Forrester's Robotics Quotient (RQ) measures the ability of individuals and organizations to adapt to and collaborate with automation to generate desired business results. It essentially evaluates the state of readiness for automation success—and suggests that only high-RQ organizations can expect to truly succeed. As Forrester's research shows, only 18 percent of global information workers—fewer than one in five—agree with the statement "My career path in the world of automation is clear to me."

A high RQ is akin to leaders and employees demonstrating the digital workforce mind-set—with organizations pursuing a flexible, responsive, resilient workforce of the future, one in which humans and machines collaborate productively.

We have outlined next a few pointers on the do's and don'ts of achieving a digital mind-set and on page 20, you'll find a quick assessment where you can measure your current state of a digital mind-set within your organization.

There is no escape from the hard work of strategic reinvention if organizations want to fully capitalize on the competitive advantages that AI can deliver.

¹³ "RQ 2.0: Assess Your Readiness For Artificial Intelligence, Automation, And Robotics," Forrester Research, 2019



The do's and don'ts of a digital mind-set

Courage to act/challenge

Do:

- Build autonomy and freedom to act into roles and team charters
- Ensure that human tasks emphasize taking accountability and using best judgment in all situations
- Ensure everyone shares priorities, projects, and progress up, down, and sideways
- Promote interdependence among team members in new structures

Don't:

Seek to control people through written rules. Instead, promote a culture of self-organization through fluid collaboration and "servant leadership."

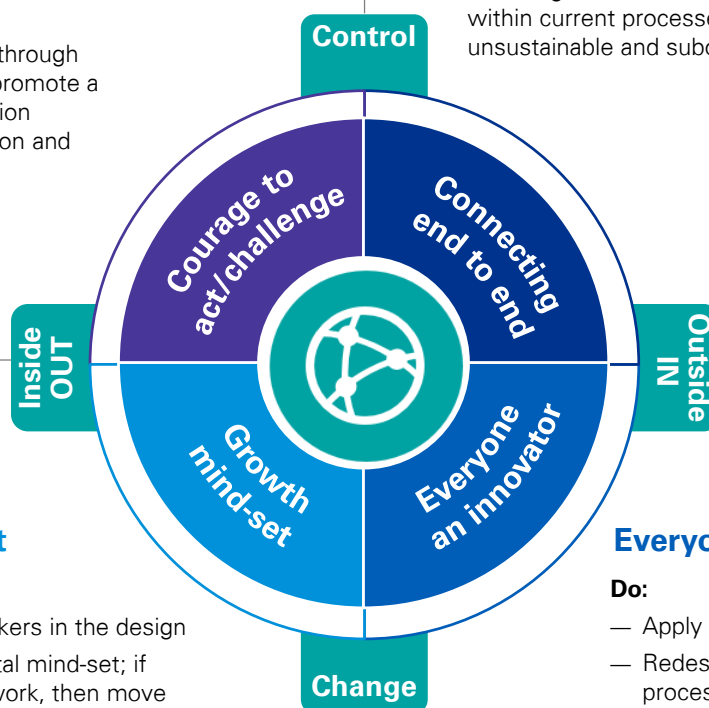
Connecting end to end

Do:

- Understand the impact on overall enterprise value chain and redesign in line with strategic futures
- Redesign the end-to-end process and think about what the required outcomes or customer experience needs to be as the primary driver
- "Horizon-scan" other industries to consider alternative and new workforce/process/service models

Don't:

Go straight to automation of existing tasks within current processes. This will lead to an unsustainable and suboptimal outcome.



Growth mind-set

Do:

- Involve affected workers in the design
- Adopt an experimental mind-set; if something doesn't work, then move on and try something else
- Create an environment where roles can evolve and people can collaborate across role boundaries
- Ensure flexibility by design
- Plan for and deliver the required upskilling/reskilling as soon as possible
- Instill a "learning to learn" mind-set across the workforce and ensure skill building is not solely focused on current tasks and keep an eye on the future of roles

Don't:

Create tightly defined roles with rigid demarcation

Everyone an innovator

Do:

- Apply design-thinking techniques
- Redesign jobs across the end-to-end process based on the following steps:
 1. Break down work into component tasks and consider how to reorganize
 2. Automate tasks according to ease, impact, and technology feasibility
 3. Apply cognitive augmentation to tasks requiring humans and machines working together to achieve outcomes
 4. Innovate new products and services
 5. Consider groupings of tasks that require similar capabilities
 6. Consider team-based organization and outcomes to enrich the employee experience and promote agility
 7. Redesign new roles and jobs based on rebuilding tasks from the ground upwards: think humans and machine roles and new human roles
 8. Redesign overall operating model and adjacent processes

Don't:

Copy other organizations but create something that exploits the unique competitive advantage and capabilities of your organization



The journey includes workforce shaping

“ **Learning has replaced control as the fundamental role of management.** ”

—Author and social psychologist, Shoshana Zuboff

A newer discipline for organizations, workforce shaping requires understanding the strategic future scenarios for the organization over a 5-to-10-year horizon and working back to the present day to understand how the traditional workforce will inevitably need to change its shape, size, composition, and organization to survive digital disruption.

COVID-19 has accelerated the requirement to understand this 5-to-10-year time, forcing organizations to bring forward their strategic planning efforts. This requires understanding the potential for digital disruption and AI to transform the workforce, and then defining how humans and machines will work together to drive productivity, value, and competitiveness in both immediate and more strategic horizons. The need for its implementation by businesses pursuing success in the digital age can best be described as inevitable.

HR executives we surveyed for the KPMG global Future of HR 2020 insights⁴ acknowledged the challenges and uncertainty they are facing in this regard, with 56 percent citing as their biggest emerging challenge the need to prepare their workforce for AI and other disruptive technologies. Most, 87 percent, also said they are sharpening their focus on understanding what the composition of their future workforce should actually look like amid technology's impact.

It will be critical to success for businesses to fully explore and comprehend the immediate and more enduring disruptive impacts of technology and digital transformation, as well as COVID-19, on traditional workforces. Only by doing so, as many organizations are already discovering (less actually implementing), can businesses bring humans and machines into a redefined workplace and New Reality that continues to ensure productivity gains and enhances competitiveness.

“ **Workforce shaping is ongoing and constantly thinking of how to rebuild and reshape your workforce. It isn't trying to replicate a skill or role of today, but rather looking into the future because you can't define the workforce of the future by looking at the workforce of the present.** ”

—Robert Bolton, Global Head of People & Change Center of Excellence (CoE), KPMG International and Partner, KPMG in the UK

Within our global Future of HR 2020 insights,⁴ we did find a subset of the survey sample who seem to be working on tackling and preparing for the impacts of technology on the future workforce today. They are responding to the “build something” challenge. We have called this cohort “pathfinding” organizations. This group is made up of approximately 10 percent of the 1,362 HR executives surveyed. Pathfinding organizations seem to be simultaneously tackling four mutually reinforcing focus areas including shaping a purpose-led culture that is aligned with business strategies, priority focus on employee experience to understand the “moments that matter,” leveraging analytics and data-based insights, and a significant focus on shaping the *future* workforce.

Beyond focus on these four constructs, potential success will also require the creation of a learning culture, one in which the process of employee learning is continuous and evolving amid the redefined humans-and-machines ecosystem. Learning to Learn,¹⁴ a KPMG-sponsored report by the UK’s All-Party Parliamentary Group on AI into lifelong learning, notes that the future of organizational learning and employment skills is not about learning a critical skill, such as coding or design thinking, and assuming one can build a lifelong career out of it. Instead, the critical skill for future success and differentiation is the ability to learn *continuously*.

An adaptable, growth-oriented mind-set is the foundation for a learning to learn core skill. This will define the winners who not only survive alongside AI “workers” but who also thrive and shape the application of AI within the workplace. This theory is also similarly supported by Yuval Noah Harari in his book *21 Lessons for the 21st Century*² mentioned earlier.

As a result of COVID-19 and the way it has completely transformed traditional ways of working, we suspect a significant uptick in the upskilling or reskilling of the workforce. COVID-19 impacts coupled with AI will demand workers obtain new skills to successfully carry out jobs. For instance, within healthcare, patient and provider safety and limiting exposure to pathogens will be a priority, likely resulting in treatment and consultation to be more virtual (versus in-person visits) and supported by AI. Care pathways may be completely redesigned via cognitive AI augmentation. This change in ways of working for healthcare professionals will require reskilling in areas such as digital literacy and technology skills.

Workforce shaping in action: a case study

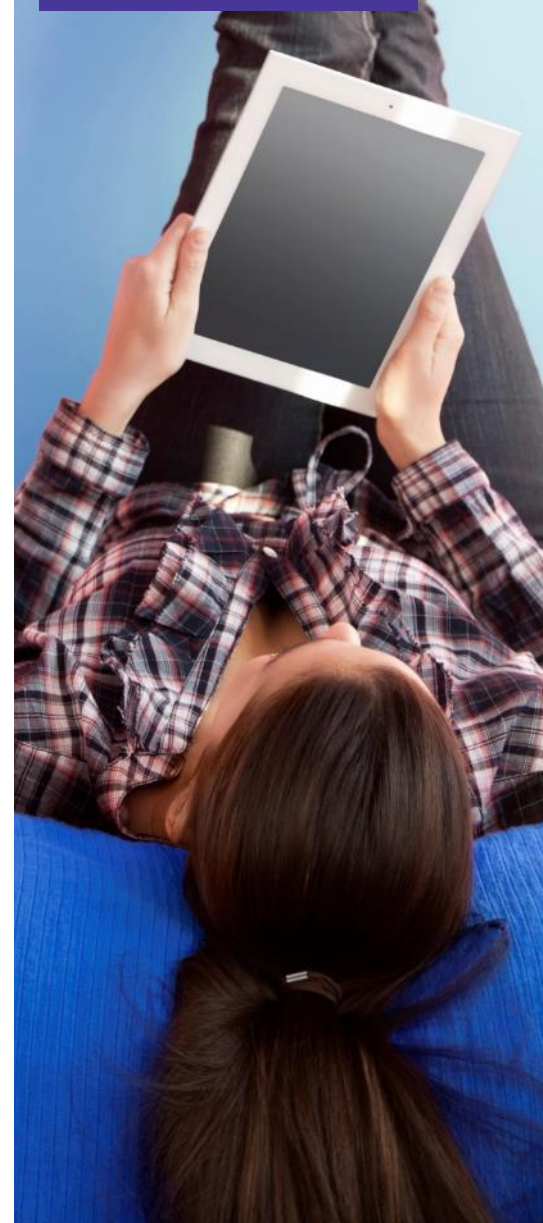
A global high-tech manufacturer was concerned that its business would be significantly disrupted by new technologies in the next five to eight years, particularly AI’s role in product design and the rapid emergence of the Internet of Things affecting mainstream household products. The company’s current approaches to workforce planning were too fragmented, focused on existing business units, and based on a one-to-two-year time horizon. Company leaders felt that this would not adequately embrace longer-term disruption, and they also recognized that the current operating model would significantly hinder or delay future product development plans.

The company took the initiative of building an enterprise-wide capability in workforce shaping to address numerous challenges including the impacts of AI and related technologies atomizing the workplace; the breakdown of boundaries between jobs, functions, and departments; and how workforce shaping will impact the shape and organization of the workforce, its size and the ratio of permanent staff versus contract or “gig” workers, and the “5B” decisions regarding the need to buy (recruit), build (train), borrow (outsource), bot (automate), and base (i.e., where people should be located—remote, headquarters, cheaper locations, etc.).

“

In a growth mind-set, people believe that their most basic abilities can be developed through dedication and hard work—brains and talent are just the starting point. This view creates a love of learning and a resilience that is essential for great accomplishment.¹⁵”

—Carol Dweck, author and professor of Psychology at Stanford University



¹⁴ “Learning to Learn: The Future-Proof Skill,” Big Innovation Centre, the Secretariat for the All-Party Parliamentary Group on AI, and KPMG, 2018

¹⁵ *Mindset: The New Psychology of Success*, Carol S. Dweck, PhD, 2006 and 2016



Words of warning about thriving— or barely surviving

“

Companies where employees consistently reported feeling safe at work (both physically and emotionally) also tended to outperform the stock-market average, sometimes by as much as 200%. ”

—Dan Lyons, author of *Lab Rats, How Silicon Valley Made Work Miserable for the Rest of Us*¹⁶

So far we have sought to describe the need for workforce reinvention as the traditional work function is becoming more and more atomized through AI and impacts of the current environment. **This atomization phenomenon requires that “work” be entirely reimagined.**

The opportunity is to create a connected enterprise that fosters the productive collaboration and division of labor between humans and machines. And this demands creativity and the exercise of informed strategic choices.

We can choose to create exceptional workplaces—special cultures boasting a clear and shared sense of purpose and skilled people whose talents are celebrated, cherished, and fully enabled. To create such organizations, leaders and their workforces need a digital and connected mind-set. Otherwise, they may be less responsive to customer needs; not be horizon-scanning for threats and opportunities; not innovate fast enough; not learn from what works and what doesn’t; and finally, they may not be agile and accountable from top to bottom.

¹⁶ *Lab Rats: How Silicon Valley Made Work Miserable for the Rest of Us*, Dan Lyons, 2018

But any move to AI presents the inherent danger of unleashing dystopian workplaces. Given that AI is rooted in algorithms that in turn are rooted in a hunger for big data, we risk creating monitored, data-driven, micromanaged workplaces that are the modern-day equivalent of the “sweatshop.” Conversely, enabling technologies may also be a supporting force for good, providing real-time coaching and advice in a spirit of creating a great employee experience.

Two things are clear: AI does not just change work, it is the tool that delivers the surveillance of work. We already understand that AI is affecting work, but we have yet to fully comprehend how AI will affect the surveillance of the worker. AI’s significant power rises from the ability to convert real-time, data-based insights into what employees might be thinking and feeling at any moment, how productive they are, even whether they are going to stick around. With most of the world’s knowledge workers moving to remote work over the past several months, measuring productivity has become a priority and many are scrambling to maintain some of the control that they once had when face-to-face interaction and monitoring was possible. Organizations are also quickly finding that traditional means of monitoring may not accurately reflect a person’s actual productivity. For instance, start and end times have become blurred and thus the standard measure of an eight-hour working day is no longer an accurate measure (and we argue that it perhaps never was).

With the capabilities of AI, we are enabled here to create what F.W. Taylor, in *The Principles of Scientific Management*,¹⁷ imagined as a highly engineered, super-efficient workplace. A return to Taylor’s principles, coupled with the ability to monitor, measure, and micromanage employees to the extent that we know what they are about to do and think, even before they do, may seem enticing to some leaders. This is the power of big data allied with machine learning and AI. Already we see examples of gig workers in logistics and distribution whose entire work day is governed by what the algorithm allows in terms of route to take, ordering of tasks to complete, and when to take a break.

As Forrester¹⁸ analysts observed and we reported in *Rise of the Humans 2*,¹⁹ “quantified workforce” technologies are already extending this level of control to white-collar work. It can monitor what we are focusing on, what our sentiment is, how hard we are working, whether we are more or less productive than our colleagues, and whether we are optimally structuring our working day, week, and month. Thus technology may form a new version of dehumanizing scientific management that reduces our freedom to act and to shape our working lives. According to a 2019 ServiceNow study, half of the Gen Z²⁰ population surveyed have experienced job burnout in the last month for six days or more. In Jeffrey Pfeffer’s research in *Dying for a Paycheck* he cites²¹ 10 prominent workplace exposures that affect human health and longevity such as unemployment, not having health insurance, working long hours, and being in a work environment that offers little social support.

He reported a clear causal link between these 10 factors (a combination of them or only some of them) being present and poor physical health, poor mental health, morbidity, and mortality and went as far as saying that the design of the workplace is the fifth biggest cause of death in the United States, which he saw as a conservative estimate. Why is this important?

Consider what AI and quantified workforce technologies may do to the potency of these factors, and the lived experience of many through the emergence of COVID-19. If we design our workplaces and our approach to virtual work well, we may improve them. However, if we do not rise to the reinvention of work challenges, there is every reason to believe these factors could all be made more intense, driven by the greater scrutiny and “quantification” afforded by AI, machine learning, and the blurred boundaries of virtual work.

Dying for a Paycheck by Jeffrey Pfeffer

10 workplace exposures that affect human health/longevity:

- 1) Being unemployed
- 2) Not having health insurance
- 3) Working shifts and working longer (more than eight-hour) shifts
- 4) Working long hours in a week
- 5) Confronting job insecurity particularly when colleagues are laid off
- 6) Facing family-to-work and work-to-family conflicts
- 7) Having low control over one’s job and job environment, including having relatively little freedom and decision discretion at work
- 8) Facing high job demands such as a requirement to work fast
- 9) Being in a work environment that offers low levels of social support (working in a collegial and supportive environment)
- 10) Working in a setting in which job- and employment-related decisions seemed unfair or opaque

¹⁷ *The Principles of Scientific Management*, F.W. Taylor, 1911

¹⁸ “Quantifying Your Company’s Workforce: Customers Benefit When Employees Do, Too,” Forrester, 2017

¹⁹ “Rise of the Humans 2,” KPMG International, 2017

²⁰ *Generation Z & the Future of Work*, ServiceNow, 2019

²¹ *Dying for a Paycheck: How Modern Management Harms Employee Health and Company Performance—and What We Can Do About It*, Jeffrey Pfeffer, 2018



Where do we go from here?

Not only will the productive automation of tasks require that we reinvent the organization of work, but so will the lasting impacts of COVID-19. This, in turn, demands that leaders make the critical choices about what kind of future-focused workplace they want to create and now at a much accelerated rate.

COVID-19 is a tipping point between the integration of humans and automation. A new normal will set in as learned behaviors and empowering technologies tested during the pandemic become standard, or more boldly, become required. The challenges to future viability and existence in the digital era remain largely unchanged—but the timeline for success has sped up dramatically given today's situation.

In responding to COVID-19, organizations are moving from Reaction (triage) to Resilience (managing) to Recovery (resetting/planning) to the New Reality (adapting to the new world) at different paces. There will be winners and there will be laggards through these transitions—not everyone will make it through. Those who move through these phases with purpose and intention are more likely to come out on top. The need for accurate workforce forecasting and planning had never been more critical amid the onset of AI and robotics, and COVID-19 has just fast-tracked this urgency and criticality. It is forcing organizations that want to continue to thrive to bring forward their strategic planning efforts, and apply them to more immediate futures.

We hypothesize that future-ready organizations pursuing strategic change that bring humans and machines together in a productive environment will not only survive and thrive with AI but also shape a future fit for humans and machines to coexist, and ultimately be better suited to handle the level of disruption we find ourselves in today. With that said, productivity gains will not happen simply by automating current work tasks within current processes. Nor will forcing AI into legacy processes or technologies. It needs to be reinvented, and built.

The opportunity is to create a connected enterprise that fosters the productive collaboration and division of labor between humans and machines. We must also be very mindful, more pronounced now by what's happening with COVID-19 in our working (and personal) world, that AI is only as good as the strategy and design behind it and that improper application of it can quickly lead to a dehumanizing version of scientific management coupled with extreme surveillance and micromanagement of our workforce. For instance, if going forward more than 50 percent of our workforce is remote, how do we manage the fine line between overbearing monitoring and allowing for “breathing space” for the workforce?

We foresee that leaders who are seeking to create a balanced workforce of the future will take a strategic approach that applies a digital mind-set to the reinvention of work. We are seeing organizations responding to the inevitable need to “build something” as AI and digital technology, and unforeseen disruption, demolish aging and soon-obsolete workplace structures while delivering modern new “building blocks” for heightened productivity, competitiveness, and success.





Success, as noted earlier, will require organizations to ensure that this approach reflects these attributes:

- Connecting the enterprise end-to-end and understanding along the way the impact of change on the enterprise and customer experience.
- Ensuring that everyone in the organization has a productive role to play as an innovator regarding the breakdown of tasks between humans and machines.
- Providing everyone an opportunity to be a “leader,” building autonomy and a growth mind-set to act while meeting business objectives.
- An innovative and flexible culture with a growth mind-set that encourages experimentation, collaboration, and change.

While no one can predict entirely what will happen as the “New Reality” sets in, or when we will get there, but what organizations can control now (or as soon as they get out of crisis management) is to plan for various scenarios that may occur and prepare for that future makeup of the workforce accordingly, one that will most certainly include forms of automation.

Have you achieved a digital mind-set?

Has your organization achieved a digital mind-set?

Trends of organizations who are:		
	... more likely to possess a digital mind-set	...less likely to possess a digital mind-set
Connecting end to end 	<ul style="list-style-type: none"> — No matter where people sit in the organization, they have a good understanding of how their work adds value to their customers and what their customers feel toward the company. — Collaborating on projects with people from other parts of the organization is natural and is encouraged. — Management encourages the open exchange of information and ideas across different work areas. 	<ul style="list-style-type: none"> — There is a gap between what is promised to customers and what is in fact delivered. — There's rhetoric about customer focus but it's not actioned. — Resources across levels are unclear how their work translates into value.
Everyone an innovator 	<ul style="list-style-type: none"> — Resources are provided with "breathing space" to take risks on promising ideas, recognizing the potential for mistakes and failure. — An idea-generating process (e.g., online) exists to which employees are encouraged to contribute. — The organization exhibits alertness to emerging opportunities and risks in the marketplace; and is open to changing current thinking and processes to prepare for the future. 	<ul style="list-style-type: none"> — There is a reluctance to do things differently in the organization. — There are limited idea-generation or crowdsourcing opportunities for employees to freely share their ideas. — Opportunities and risks are often missed due to "in the moment" and reactive thinking.
Growth mind-set 	<ul style="list-style-type: none"> — The culture encourages everyone at all levels to find ways to keep improving and openly acknowledge mistakes — Progressive policies and practices of the organization draw on the diversity of the experience and skills of the workforce. — Resources are empowered to raise concerns about issues—and they will be heard without repercussions. 	<ul style="list-style-type: none"> — There is a reluctance to face the facts and address deep-seated problems. — Employees generally do not feel safe to try new things out especially if it could be seen to fail. — Policies and practices are outdated and do not take into account diverse perspectives, skills, or experiences.
Courage to act/challenge 	<ul style="list-style-type: none"> — The workforce at all levels is encouraged to think and act like a leader. — All leaders, no matter what level in the organization, keep their "finger on the pulse" of organizational performance. — Leadership makes it a priority to meet with front-line staff to discuss openly their issues and problems. 	<ul style="list-style-type: none"> — Leadership is all about the "top of the shop" in the organization and feels "top-down." — Leadership tends to stay close together and spend limited time with all levels of the organization. — Only the top levels seem to understand and grasp the current and future state of organizational performance.



“

Success in creating AI would be the biggest event in human history. Unfortunately, it might also be the last, unless we learn how to avoid the risks.²² ”

—Stephen Hawking, theoretical physicist

²² *Brief Answers to the Big Questions*, Stephen Hawking, 2018

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For further information about how KPMG professionals can help your business get future ready and proactively respond to the “build something” challenge, please contact us.

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