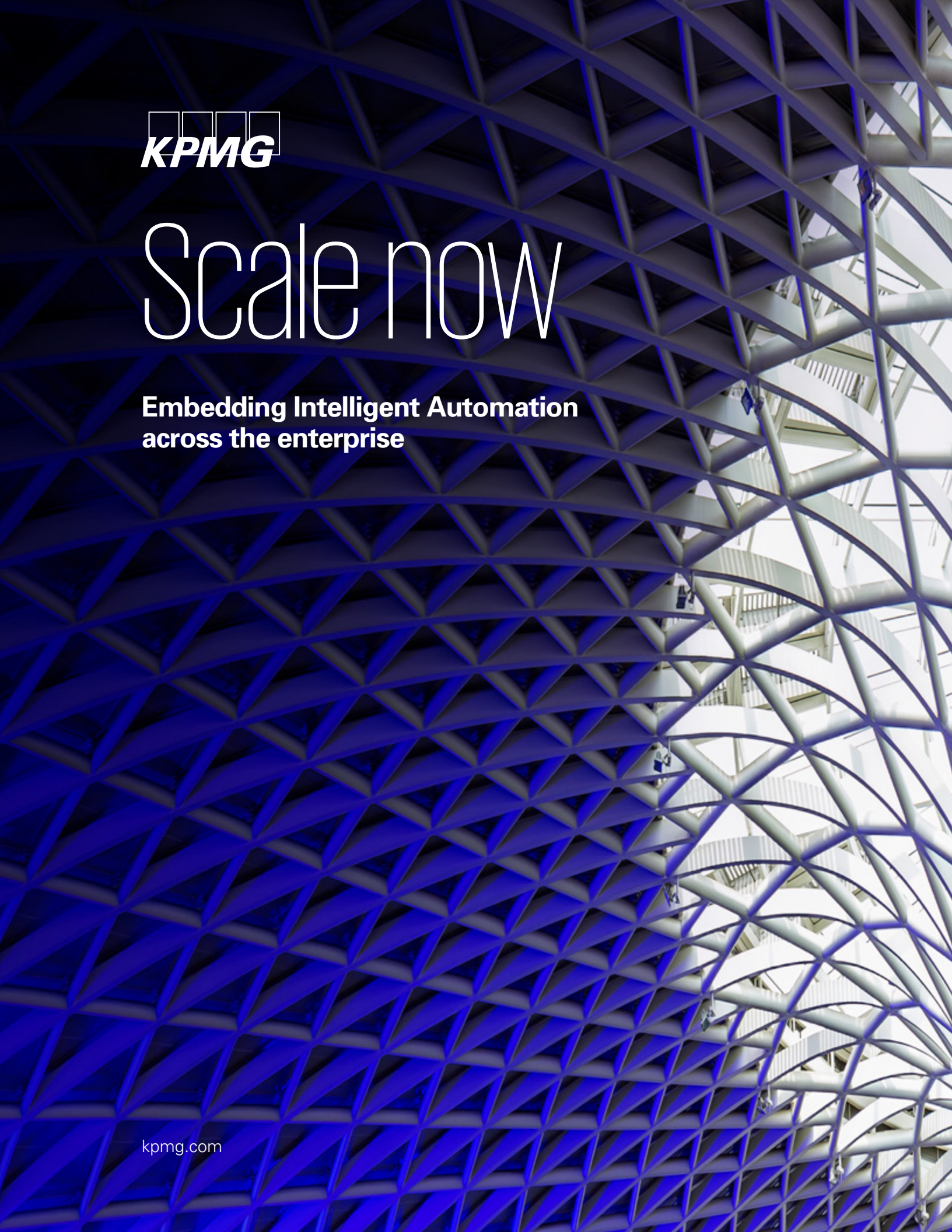

KPMG

Scale now

Embedding Intelligent Automation across the enterprise

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Contents

Cut through all the talk and attention focused on deploying automation technologies to one big headline:

Scale or fail.

Enterprises are keenly aware that they can't achieve their ambitious goals for intelligent automation (IA) without more scale. Most leaders think they can meet the challenge, but a big perception gap exists between aspiration and reality: Investment, leadership and talent are holding companies back.

Uncertainty about the financial investment needed to advance IA is a big inhibitor. At the same time, lack of clarity and accountability for driving the agenda forward is face to face with massive cultural change. Technology isn't the problem; it's the human factor.

KPMG International collaborated with HFS Research[1] to investigate the true pace of change this IA phenomenon is having on enterprises. We surveyed business leaders and executives across six industries and thirteen countries. The quantitative research was supplemented with qualitative interviews with IA leaders at global brands to contextualize the trends.

This report is a guide for the key decision-makers and implementers within the enterprise focused on how to effectively embed and scale IA throughout the organization.

1 HFS Research in conjunction with KPMG: *Easing the pressure points: The state of intelligent automation*, March 2019

KPMG

Numbers tell the story: Most companies are piloting artificial intelligence and robotic process automation initiatives by now. But the joint study by KPMG and HFS Research shows that only 17% of the 600 executives surveyed say they have scaled their efforts.[1] Companies are embarking on this journey with caution. They're seeing results in finance and accounting and global business services, but critical areas like customer service, sales and marketing appear to be lagging behind. Too many organizations don't know what to do next or how to scale.

Reality is a great motivator. *Ready, Set, Fail?*[2]—a report from KPMG on the state of transformation—noted that executives have high expectations for the impact intelligent automation can have on their businesses, but they're not ready to implement.The KPMG/HFS Research study bears that out: Core business functions like tax and accounting are being transformed by robotic process automation (RPA) and natural language processing (NLP), the engine behind virtual and cognitive assistants. The motivation is there; the money is there. But the optimism and aspiration to scale as fast as possible are at odds with the reality of executing IA effectively across the breadth of the enterprise.

Only 17% of 600

executives surveyed say they have scaled their efforts around IA.

2 KPMG. *Ready, Set, Fail? Avoiding Setbacks in the Intelligent Automation Race*, December 2018

We define Intelligent Automation as an umbrella of technologies that enable the transformation and automation of business processes through any combination of software robotics, cloud, artificial intelligence, and smart machines.

At its most basic level, robots—or bots—automate the steps in a process instead of having people move transactions from one step to the next.

At its most complex level, cognitive systems draw on historical data to handle exception processing, make judgments to resolve customer issues and complement knowledge workers to provide new insights.

What is scale — and why is it so important?

Scale means deployments are beyond pilot stage and into full production, across multiple end-to-end functions or processes. They're fully ramped up and operating. When scaled, these technologies make people more efficient and can lead to the development of new products, solutions, and business models. Ultimately, scaling IA is about generating value by creating more capacity and greater productivity—enabling people to do more meaningful things in a more informed manner. In essence, taking the mundane, repetitive and process-oriented tasks away from workers, freeing them to rise above mindless administrative tasks.

How do you scale fast and effectively?

According to the KPMG/HFS Research study, maintaining the courage and top-down leadership to charge ahead is essential to achieving IA scale. Realizing and prioritizing the need to upskill and reskill in-house IA talent needs to be interlaced throughout this vision.

This revolution is not just about technology; it's really about change—and, therefore, change management. The true leaders will be those who succeed in doing business in wholly different ways, with human and machines complementing each other.

Key findings

The inability to scale is the largest perceived inhibitor to achieving goals. Two-thirds of organizations are piloting, moving to production or scaling their IA, but only 17% of organizations have fully scaled intelligent automation technologies across their organizations. The most-scaled technology is smart analytics (23%). RPA adoption lags at only 13%.

Investment in intelligent automation (IA) technologies is strong. Over half (52%) of organizations surveyed have invested more than $10 million, and nearly a third (30%) have dedicated over $50 million.

IA solutions are siloed. Although 60% of respondents are using multiple technologies, the implementation is piecemeal. Only 11% have integrated automation, analytics and AI as a 'trifecta solution.'

The top strategic goals: driving revenue growth and making better use of data. The top operational goals are centered on the customer experience. Thirty percent aim to improve customer service quality and interactions; 23% want to streamline the customer service delivery model. Almost a quarter (24%) are motivated by topline growth; 18% by accelerating data and analytics and improving insights.

Scale or fail: Staying ahead of the competition

Fragmented efforts to scale IA mean little or no return on investment—and that means falling behind.

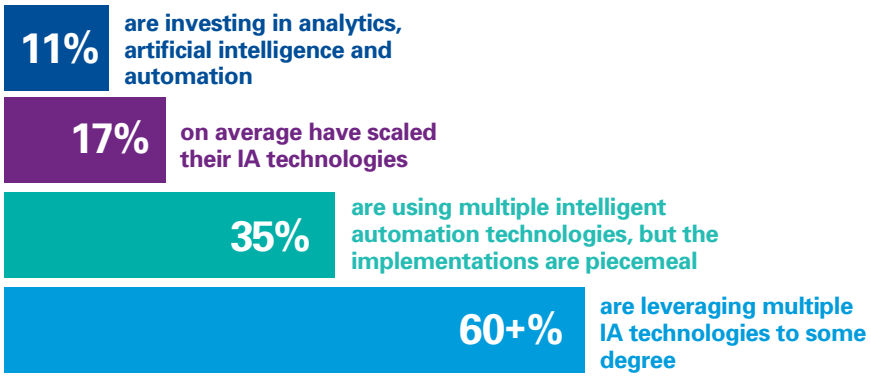
Being digital-first is not about how or when your organization was formed or what you sell—and it's not even about any single technology. It's about thinking of your organization as a tech organization no matter what you do. It's about having the leadership to approach automation boldly and intelligently.

The transformation up-ending business and society is a total reinvention of the core processes that define a business and the role of people in the full range of functions—how they work, what they do, and the intelligent interactions they have with customers.

This revolution demands new business and operating models, a new way of working that will be embedded into the DNA of successful brands into the future.

EXHIBIT 1

Failing to Scale*



* HFS Research in conjunction with KPMG: *Easing the pressure points: The state of intelligent automation,* March 2019

It comes down to this: If you're stuck in the piloting phase, and you're running into brick walls as you try to build a new culture around data and analytics, you could wake up tomorrow with a business that's no longer relevant. If you need help with the enormous change management challenge ahead, and you're not getting help, your competition will likely end up on top. This sounds dramatic because it is. But that's the new reality. No scale, no return on investment. You fall behind.

A third of organizations in the KPMG/HFS Research study are piloting solutions across the spectrum of IA technologies—including smart analytics, various AI technologies, cognitive and smart virtual assistants, and robotic process automation (RPA). A little over a quarter are moving into production. But only 17% on average have scaled and industrialized intelligent automation technologies.

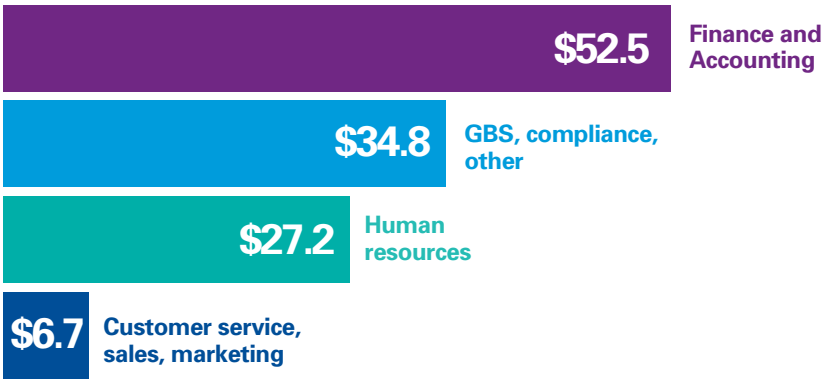
Organizations are clearly taking steps—and they're ready to scale, given their spending (Exhibit 1).

The efforts, however, are scatter-shot. Over 60% are leveraging multiple technologies, but a fair percentage of them (35%) are piecemeal and siloed at the functional level, primarily in finance and accounting (Exhibit 1 and 2). Massively underfunded are sales, marketing and the customer experience, the very goal at the forefront of real transformation. And there is little integration across the three key technology categories: automation, analytics and artificial intelligence—the 'three A's—according to HFS Research.

EXHIBIT 2

Lopsided spending (in millions of dollars)*

53% **have invested more than $10M in automation technologies so far—and a third have spent $50M or more**



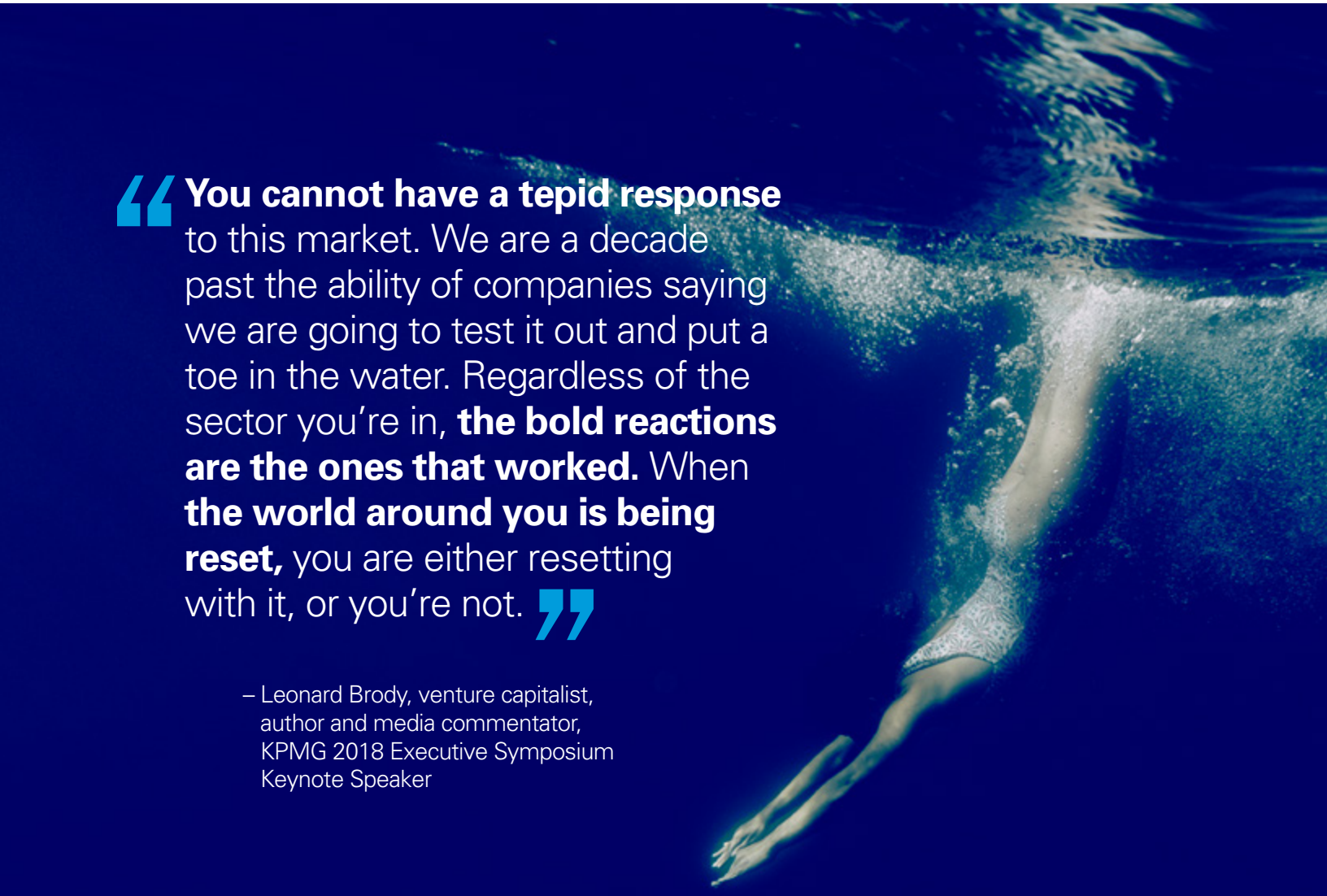
* Source: HFS Research in conjunction with KPMG: *Easing the pressure points: The state of intelligent automation*, March 2019

> "Once a foundational investment is made in tools, staffing, process redesign and core infrastructure including cloud, they can be applied across a wide-ranging scope of applications and functions to achieve scale."
>
> – Cliff Justice, U.S. Leader of Intelligent Automation, KPMG

Scale smart: Transforming business and operating models

The clear path forward for any business is scaling automation technologies across the expanse of the enterprise—and the only way to get there is by balancing priorities and goals around core steps.

Improving readiness for scale and transformation involves a number of actions. *Ready, Set, Fail?*[2] notes that "differing stages of adoption can exist across an organization—transformative in part of the business and incremental in another." Among the reasons leaders are flailing at this stage: They have to understand and choose among hundreds of technology options; they need to get data and analytics rolling; and they have to decide the order and priority of automation among all the moving parts of their organizations.



> "**You cannot have a tepid response** to this market. We are a decade past the ability of companies saying we are going to test it out and put a toe in the water. Regardless of the sector you're in, **the bold reactions are the ones that worked.** When **the world around you is being reset,** you are either resetting with it, or you're not."
>
> – Leonard Brody, venture capitalist, author and media commentator, KPMG 2018 Executive Symposium Keynote Speaker

Many of these steps depend on the state of automation and scale at your organization. They're all important. That's why a portfolio approach that prioritizes and balances needs and goals is the best path. However, nothing will advance without two basic realizations:

- **The C-suite needs to lead the way and make bold decisions on scaling functions across business units—and organizations must have the right in-house talent to develop and benefit from the transformation.**
- **Automation is not simply about deployment—it's about business and operating model transformation built on data, and new technologies supported by people.**

Build the culture

The prevailing approach to automation is IT-led: The KPMG/HFS Research survey shows that just one fifth have created integrated IT and business leadership teams to grapple with IA strategy and deployment.

Prioritizing and strategizing the deployment of automation technologies across business functions requires an interdisciplinary and whole-brained approach, which cannot be accomplished with just 20% of the leadership team on board. What does whole-brained mean? It's the blend of different talents and ways of thinking—left-brained and right-brained—into centers of excellence with perspectives and expertise that will create the right business rationalization, measurement and incentive systems for scale. It's melding business and IT into a team with 360° vision.

Mind your data

18% see accelerating the ability to leverage data analysis as a key strategic goal.

Readiness comes down to data. You can build the business case and machine learning models, but your outcomes won't mean much if you're not working with solid data. This is the weak spot for many organizations, quite simply because it's not easy. Data governance has to change: What data do you provision, is it accurate and relevant—and is it integrated? If a customer gets different answers from different channels in your ecosystem, it's ultimately a data governance problem. A core question: Do you have the expertise to manage and protect your data, or should you partner with an expert?

Go to the cloud

In 2019, cloud computing will firmly establish itself as the foundation of tomorrow's enterprise application platforms. It's the best way to create the compelling software experiences that your customers demand and your competitors fear.[3]

You can't build a serious IA program without being in the cloud. And yet, despite all that is said about it, few organizations take full advantage (or any advantage) of the computing power and data storage capabilities of the cloud as a platform for scale. Why is it so important? The cloud provides a single point of truth around data, instant collaboration and instant scale—massive computing power that can be called up and utilized as needed, efficiently.

Blend technologies

The most notable trend in the KPMG/HFS Research study is that the majority of enterprises are investing in myriad automation technologies.

Desired outcomes determine technology. No single solution can realize all the ambitious goals of an enterprise. It's like blending paint in a bucket to find the right color for every room in a house. Each color scheme depends on the business cases developed. RPA combined with IBM's Watson deep learning platform sorts through the 350,000 daily emails one French bank gets every day, freeing employees to work on more complex issues and tend to customers on a more personal level.

3 Forrester, *Prediction 2019: Cloud Computing Comes of Age as the Foundation for Enterprise Digital Transformation*, November 2018

CASE STUDY

Scaling IA to reduce costs and improve quality and efficiency

Client challenge

In such a rapidly changing marketplace, this insurance company launched a massive transformation to lower costs and also improve quality and efficiency. Executives focused on efficiency in order to remain competitive in its current businesses while also pursuing new markets. They launched a bold approach to scaling intelligent automation to support one of the company's business lines, as well as corporate and administrative back-office processes. The goal was to better engage employees and customers while lowering costs.

Client results

In only four months, the company had a solid intelligent automation roadmap that included automating core business processes such as customer form requests and back-office processes such as Salesforce gatekeeping and sanctions screening. By automating these processes, company leaders were able to:

– Shorten and simplify the process for customers to request forms

– Free employees to focus on working with customers to solve more complex issues

– Create consistent, streamlined and automated processes

– Shorten process time significantly

– Convert selected processes to managed services to avoid investing in these technologies and people to manage them

KPMG advisor insights

Transformation can start slow and gain momentum

This company was in the midst of a significant, long-term transformation. That's where the KPMG team came in. Using industry and domain experience coupled with knowledge of intelligent automation – robotic process automation, machine learning and natural language processing – and KPMG's broad partner ecosystem, the skilled collaborative team was able to help the client pick up speed on its automation journey.

Prioritizing processes + right technologies = better results

This company's executives are now fully engaged in the transformation and focused on prioritizing processes and using the right technologies that will deliver the best possible business results. They're using a combination of robotic process automation, machine learning and cognitive technologies, depending on the process. The team is also using process and organizational change as well as digitizing data on the front end to improve even more.

New way of working: How to build culture for scale

Top-down leadership and in-house talent are the fuel for transformation and success

The ingredients of a digital-first culture are a mix of technologies and people. Culture is the way you provision talent, the skillsets you cultivate and nurture, and how you deploy this talent around defined goals and tools.

Automation will replace many of the repetitive tasks that are a part of most jobs. A modern culture embraces such a deep transformation of work; it responds fluidly as IA technologies evolve into reason-based systems that take on bigger roles.

This transformation is not the end-of-work dystopia described by so many voices today; it's essentially the rise of a new human power.

New jobs and new skillsets are already sprouting around innovation. A dynamic culture builds its own skills and capabilities from within and deploys the right talent in the right ways around the right technology—and it does so in large part by upskilling or reskilling its workforce.

People make and mold IA—and they will be the guiding hand in its evolution. IA in turn will supercharge human capability. An adaptive and continuous learning culture that unifies business and IT—one that focuses on the nuts and bolts of data—will produce better insights, driving topline growth. A strong culture must be ethical in its design and deployment of IA. Only then can it breed trust and reinforce the brand.

Build a critical mass of skills. Successful transformation can't happen without ideas that have the space to percolate. You need a melting pot of minds and the technologies to go with it. The left-brained and the right-brained talent in both business and IT will inspire and realize the strategy set in place by C-level leaders—and they'll spin off disruptive ideas. With the right skillsets in place, scaled across business functions, talent and tech will feed off each other across different areas of the business. But, to quote KPMG's Miriam Hernandez-Kakol, it is critical that they have "the runway to create and pursue their passions."

Take in ideas. How can an organization capture powerful ideas in the minds of tech-forward talent? One effective way is through gamification, which uses elements from games in non-game settings to generate ideas or responses, usually with a financial reward. Gamification in the workplace can unlock creative approaches or solutions to specific objectives. Think of it across business functions as ideation begins around the deployment of technology. You're involving the people in these functions to be part of the process.

Learn and develop. A digital-first business is a skills factory that builds what it needs to the fullest degree possible now. Data scientists and big data software engineers—and a whole new slew of tech talent (See "The New Jobs")—are going to be in demand well into the future. And these jobs will always be changing. To compete, organizations have to develop the talent they need through programs and initiatives that educate both business and IT, a distinction that should evaporate as much as possible.

Crowdsource. Being fluid and agile in projects and sprints requires a new way of sourcing work quickly. Much like the cloud, crowdsourcing enables instant scale, at a moment's notice. One venerable insurance organization refined its claims algorithm on its own, without outside help, for over 60 years. Its leadership didn't think any outside person or team—with or without industry experience—could come up with a better algorithm. But what happened when they anonymized their data, hid their identity and presented the "claims algorithm challenge" to an open crowdsourcing community of data scientists and coders?

Here's what happened: The crowdsourcing community created a better claims algorithm for the insurer within three days. By the end of the contest, it was 270% better. The organization saved around $50 million for that little vertical—and it cost them only $10,000.

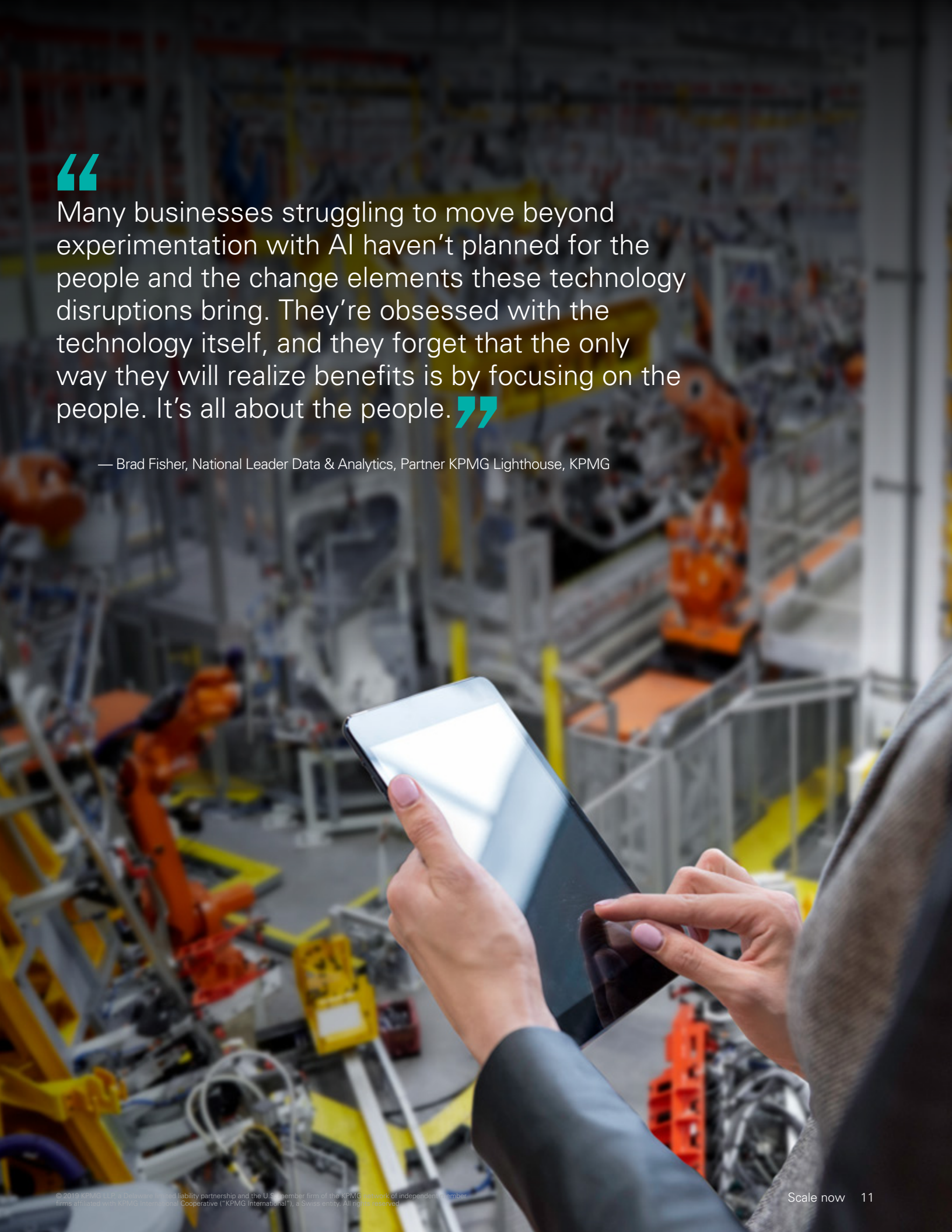
> The new order of work is mixing specialists in different areas, with a crowdsourcing aspect. It will be a much more democratic way of organizing organizations and the work. We've found that the diversity of thought and experience that organically comes from this process is essential to innovation and problem solving. People gravitate to each other, even if they don't have the same skillsets. That's the generation coming up now. That's how they work.

– Miriam Hernandez-Kakol
Global Service Line Leader –
Customer and Operations Advisory, KPMG

The Golden Ticket: Change Management

The biggest hurdle facing leaders as the ground shifts under their feet is how to effectively manage change. It's such a deep and difficult issue—and it doesn't get the coverage it deserves amid all the talk about tech and outcomes. Consider the depth of the challenge: Jobs are changing as AI technologies pick up some of the tasks, functions are being automated and the workplace itself is just coming to grips with a whole new way of working. Leaders have to engineer a massive, unprecedented cultural shift to get everyone ready, willing and able for transformation.

But there's more. The change extends well beyond your organization. Think about your customers, suppliers, partners, and almost every other stakeholder: They'll need to adjust to new technologies that will make their lives and experiences with your brand better. You'll have to educate them. You'll need buy-in from them. Many of the processes in your organization touch on these external factors and forces—contracts, for example, and new legal risks. It won't be a smooth transition—or any transition at all—unless you manage the change.



> Many businesses struggling to move beyond experimentation with AI haven't planned for the people and the change elements these technology disruptions bring. They're obsessed with the technology itself, and they forget that the only way they will realize benefits is by focusing on the people. It's all about the people.

— Brad Fisher, National Leader Data & Analytics, Partner KPMG Lighthouse, KPMG

New jobs: How to hire for scale

New technology will create almost 15 million new jobs in the next decade—and many of them are coming online today and play important roles in scaling automation technologies.[4]

What jobs are crucial to scale intelligent automation efforts?

According to Brad Fisher, National Leader, Data & Analytics, skills that are not prominent in the corporate world—linguists, for example, and psychologists and an assortment of right-brained people with humanities and liberal arts training—are already arriving across business units and different levels. Many of the new roles will be focused on managing AI and automation.[5]

With the surge in open AI roles on the horizon, companies are competing to build and diversify their teams to help them progress from pilots to integrated and scalable solutions across the business. Based on KPMG's own projects and those we advise clients on, here are the top five AI jobs that companies need to create or consider if they are to effectively build and scale their capabilities:

AI Architect

Think of this leader as the overseer of AI in the organization—someone who understands at a global level where AI can be injected most effectively. AI architects measure and sustain performance of evolving models, and they focus on optimizing humans at work. Pin unsuccessful efforts to scale largely to a lack of AI architects.

AI Product Manager

Top-down leadership and architecting can't be done without a liaison to ensure that disparate teams are aligned around strategic goals. This person also monitors the solutions to be sure they are successfully implemented and that the outcomes fully address the goals. The AI product manager also works with teams, including HR, to help optimize human-machine interactions.

AI Ethicist

This leader is really the chief trust officer. The technologies changing business and society—and, without exaggeration, humans themselves—have to be controlled and understood for them to be accepted as unbiased forces for good. Leaders in some organizations (the AI architect, for example) can assume the role, focusing on transparency and explainability across deployments.

Data Scientist

With the ever-growing amount of data available to businesses, there is a shortage of experts with the skills to clean this data, and then design and apply the appropriate algorithms to glean meaningful insights.

Software Engineer

One of the biggest problems facing businesses is getting AI from pilot phase to scalable deployment. Software engineers work hand-in-hand with data scientists to bring AI into production, blending business acumen with a deep understanding of how AI works.

4 *The Future of Jobs Report*, World Economic Forum, September 2018

5 *The Top Five Hires Companies Need to Succeed in 2019*, Brad Fisher https://info.kpmg.us/news-perspectives/technology-innovation/top-5-ai-hires-companies-need-to-succeed-in-2019.html

Future scale: Holistic integration

Embedding intelligent automation across the enterprise requires more than technology. To scale smart and stay ahead of the competition, you need leadership and in-house talent to transform business models and mold solutions.

Executives know they can't achieve their goals for IA without more scale. The ambition is there, but they're struggling to embed and enable IA technologies as deeply as they want across their organizations. Among the reasons according to our research: They're too cautious in terms of pushing IA beyond pilots or deployments at the functional level; they lack the financial commitment; and they're fighting to secure the talent they need to become truly digital-first organizations. In many ways, the age of automation boils down to people—and leadership.

Every business needs to be a tech company in its mindset and actions. In essence, leadership must approach automation boldly and intelligently to redefine core processes and the roles of people in the full range of functions—how they work, what they can do and the intelligent interactions they have with customers.

KPMG recommends the following steps ▶

7 steps to a successful IA integration

1 **Redesign your core processes and operating models** in terms of the advances automation technologies can provide

2 **Gain top-level leadership support from a leader who enables transformation** with financial buy-in and the enthusiasm that rallies teams around the cause

3 **Build a culture of automation by uniting IT and business teams** so you can prioritize and strategize the deployment of technologies across business functions in an inter-disciplinary and whole-brained way

4 **Blend and integrate IA technologies** as a way to reinvent processes or functions instead of opting for piecemeal tactics to solve problems

5 **Govern data** to build the business case and machine learning models from accurate, relevant data

6 **Commit to change management programs** to manage the transition from human to digital labor

7 **Hire for the new skills needed to build and manage automation technologies**—and be creative in addressing IA skills shortages by leveraging contingent labor, crowdsourcing and external service providers

How KPMG can help

KPMG can help your organization take intelligent automation to the next step—and ultimately achieve smart, full-scale deployment of technologies across functions. Ranked by HFS Research in late 2018 as a Top 10 RPA Service Provider, as well as a Top 10 Digital Change Management Provider, KPMG combines transformative technologies and capabilities alongside deep-rooted domain expertise to accelerate innovation and drive speed, scale and relevance to our client's business.

Scale now

According to our research, executives understand that they can't achieve their goals for IA without more scale. The ambition is there; effective execution is the challenge. A tremendous opportunity exists in scaling these technologies to close the gap that so many businesses have in implementing transformative IA. Those businesses that push to the next level of adoption can and will get ahead of their competition.

kpmg.com/us/intelligentautomation

Methodology

Insights from this report were gleaned from a variety of sources:

- HFS Research in collaboration with KPMG investigated the true pace of change this IA phenomenon is having on enterprises by assessing the rate of adoption of emerging IA technologies, the early successes and challenges, and changing directives from the C-Suite to reach desired goals and outcomes. We surveyed 590 business leaders—including 100 C-level executives across six industries and thirteen countries. We supplemented this quantitative analysis with detailed qualitative interviews with IA leaders at global brands to contextualize the trends.
- At KPMG's 2018 Executive Symposium on Intelligent Automation, over 250 forward-thinking clients, business leaders, visionaries, economists, analysts and leading technologists met to discuss new ideas and opportunities, and debate the future of our automated world. Insights from these luminaries have strongly informed this paper.

About the author

Cliff Justice is KPMG's U.S. Leader of Intelligent Automation. He has more than 20 years of experience in operations, technology, outsourcing, offshoring, and business transformation and has been a part of over 50 significant service delivery model transformations, technology enablement and operational improvement initiatives over his career. Cliff has been an early leader in applying intelligent automation, robotics and cognitive technologies to business operations and services and has led KPMG's own transformation leveraging these disruptive technologies.

Cliff speaks regularly at industry conferences, has published over twenty white papers on robotic innovations, automation, outsourcing, offshoring, and shared services, and is frequently quoted in leading business publications. He is currently focused on helping his clients plan for the massive unprecedented cultural shifts in the workplace, as well as beyond the workplace, including how it affects their customers, suppliers, partners, and all stakeholders.

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