Easing the pressure points: The state of intelligent automation

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Intelligent Automation and Data & Analytics

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Overview

Intelligent automation (IA) and data and analytics (D&A) are at the top of every organization's strategic and tactical agendas. And rightfully so: the technologies don't just promise to improve operational efficiency and effectiveness; they also provide the basis for a broad range of new or enhanced products and services. In fact, more than a third of today's business leaders say they view IA as a way to drive future revenue growth. Many also see it as an opportunity to improve customer service quality.

While there is much concern around IA (for instance it will lead to massive job losses, marauding bots, privacy invasions), the reality is that it will have a huge impact on how organizations operate and on the nature of what constitutes work in the future. In fact, it already seems clear that IA will be key in addressing skills shortages in aging workforces, enhancing worker skills and automating the mundane to free up worker time to focus on value-added services such as analyzing data instead of just processing. The key for organizations is to parse hype from reality by better prioritizing IA investment areas and also by realizing that all pilots are not equal in terms of benefits returned. The onus is on enterprises to determine how best to integrate and coordinate cross-organizational efforts, and ensure adequate change management programs and practices are in place to address the disruption IA adoption will entail.

While advanced D&A adoption is more mature, IA adoption is much more nascent in most organizations, with less than 20 percent of firms surveyed at scale saying they are beyond pilot stage and 'up and running' with their IA efforts. This is due to many factors, including immaturity of the technologies and cost of deployment but more so due to organizational uncertainty on where to start, how to coordinate and integrate (or not) disparate efforts, and how to address the impact these technologies will have on their operations and workforces. Robot process automation (RPA), for example, could partially or fully eliminate many work roles in an organization. In addition to managing the disruption this will cause, organizations must determine how to address the future of their workforces: will you retrain, reskill, or retire employees affected? And if you choose to retrain or reskill, in what exactly?

Intelligent automation (IA):
Intelligent automation represents the overall umbrella of technologies that enable the transformation and automation of business processes by leveraging any combination of software robotics, cloud, artificial intelligence and smart machines. It is comprised of basic robotics process automation (RPA), enhanced RPA, cognitive automation and is enabled by rules-based macros, artificial intelligence and natural-language processing. 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.

Ironically, at the same time as organizations are struggling with what to do with workers whose jobs are eliminated, they also recognize that their intelligent automation efforts, especially in the areas of machine learning and artificial intelligence, are hampered by a lack of skilled resources needed to design, build, deploy and manage these systems and initiatives. There is a gulf emerging among the have and have-not companies — a gap that's only widened as less than 10 percent of companies held more than 30 percent of the job postings among the largest 100 US companies[1]. So where do organizations find the talent and skills they need to support their IA ambitions?

Regardless of these challenges, organizations must press ahead with their IA efforts or seriously risk longer-term marginalization against competitive peers that are forging forward. The evolution and adoption of IA technologies is proceeding at such a rapid pace that, while executives recognize its game changing potential, many struggle to understand what that means to their own organization and its operations, and what it means in terms of where they should place their own IA bets and investments. While it is relatively straightforward, for example, to save some money via an RPA deployment, even RPA is proving more complicated and time consuming to successfully enable what was often initially estimated. If all an organization gains through IA is incremental cost savings, it is missing out on IA's full potential.

To get the most from IA efforts beyond cost savings, broad-ranging transformation is needed, not just in a piecemeal way. This holds true even to achieve benefits from lower-level RPA.

It takes a corporate culture that is ready and capable of embracing fundamental changes in how it operates. It requires tangible and active top-level executive commitment and strategic leadership. It takes an understanding of the impact of IA on the workforce and the change management capabilities to address it. And it requires practical knowledge of the various IA technologies, judicious use of third-party expertise and, finally, a recognition of the amount of time, money and resources it will take to exploit IA's potential.

Our study found that the organizations that are having the most success in overcoming IA challenges and taking advantage of its opportunities are often those already in agile, fast-moving markets and industries. This is not surprising. These firms strive to proactively

> ## " Feeding the core business while retooling is a really big challenge
>
> **Cliff Justice,**
> Principal, Intelligent Automation, KPMG in the US "

get ahead of the IA curve even if it means pivoting from traditional existing businesses. They are the leaders or 'frontier firms'[2] (investors in new technologies and process that yield gains that compound over time to pull them ahead of laggards), not just fast followers. These frontier firms also tend to have much less legacy baggage in terms of mindset, operating models and IT systems.

"Feeding the core business while retooling is a really big challenge," sums up Cliff Justice, Principal, Intelligent Automation, KPMG in the US.

It takes patience when pushing forward with IA efforts, especially given the whole transition may face resistance from managers and staff who may naturally resist and feel threatened by change, especially when it might lead to job loss and changes to roles and operating models.

Despite these challenges, organizations must press ahead with their IA efforts. They must also pay keen attention to how to address not only the technological challenges they will face, but also those more operational and cultural in nature.

Intelligent automation will span quickly across all industries and will disrupt businesses at an accelerated pace. The competitive businesses of the future will be far along the IA curve of development.

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1 KPMG International: AI 100 report, 2019
2 KPMG defines frontier firms as the top 10 percent of a sample of the 15,000 largest global firms with the highest total factor productivity. The value creation potential forgone by all the follower firms rose from US$3.6 trillion in 2010 to US$4.9 trillion in 2016, as frontier firms pulled farther and farther ahead.
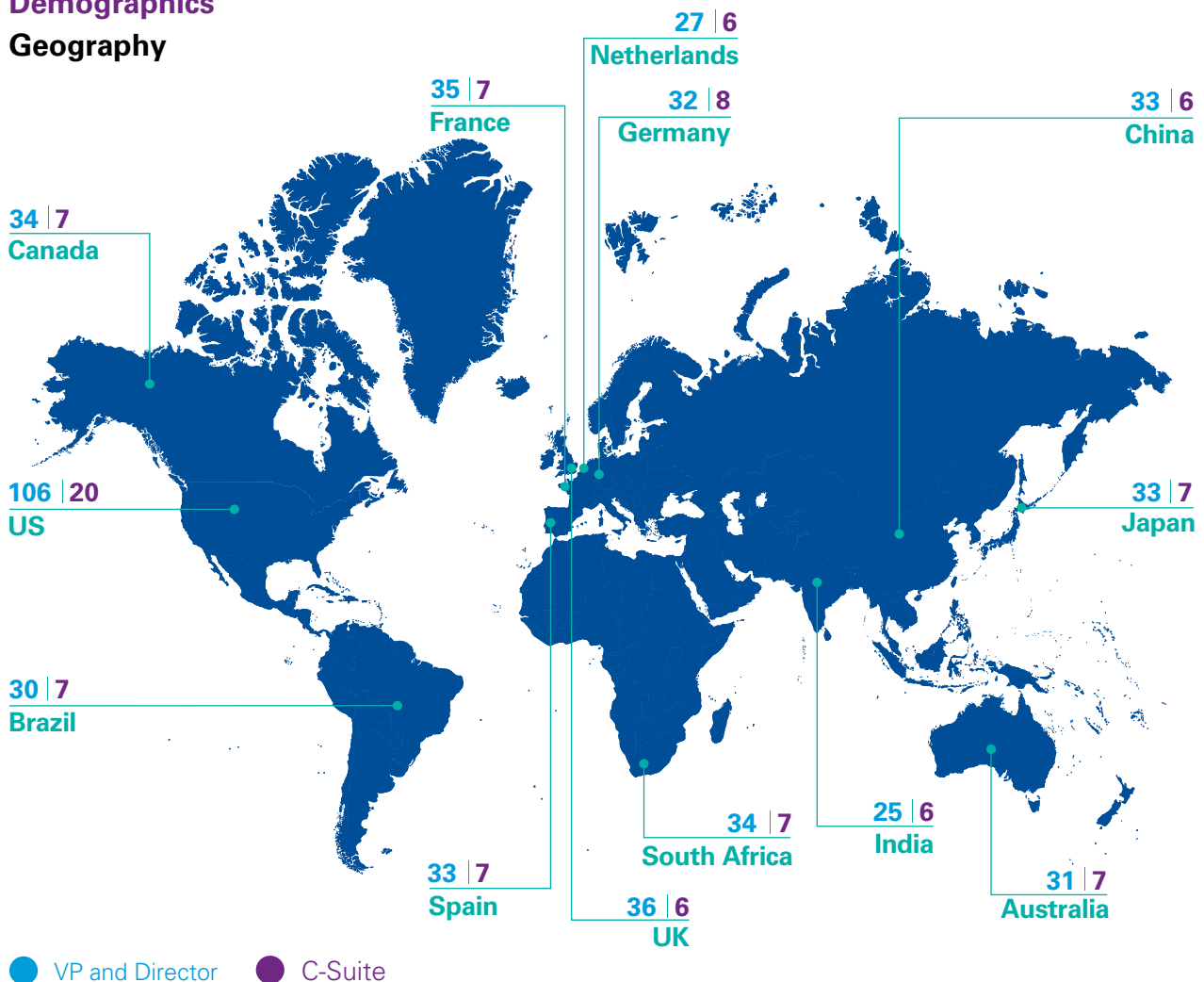
⌕ The research

KPMG International collaborated with HFS Research to explore several focal points: how fast IA technologies are being adopted and why, what successes and challenges (ranging from early stages to full development) have surfaced, and hurdles that business managers still need to jump to get going with these emerging technologies. Nearly 600 business leaders, including 100 top-level executives across six industries and 13 countries, were surveyed and queried about their experience with handling intelligent automation issues. Detailed interviews with industry leaders at global companies provided additional, close-up insights into this rapidly-evolving, new arena.

KPMG International sought to find out more about how leaders are getting prepared and staying ahead of this game-changing trend. Our survey aimed to explore IA's progress in the business world:

— Current IA goals and objectives

— Specific areas of internal and external investment related to IA technologies and services

— Current barriers and challenges to adoption

— Opportunities for overcoming current challenges.

Demographics
Geography

27 | 6 Netherlands

35 | 7 France

32 | 8 Germany

33 | 6 China

34 | 7 Canada

106 | 20 US

33 | 7 Japan

30 | 7 Brazil

34 | 7 South Africa

25 | 6 India

31 | 7 Australia

33 | 7 Spain

36 | 6 UK

● VP and Director   ● C-Suite

Source: HFS Research in conjunction with KPMG International, State of intelligent automation, 2019
Sample = 590 business leaders including 100 C-level executives

Five key findings show that executives expect IA to create value and speed up time to market. But the data also suggest a lag in getting IA into action and achieving results.

1 The end goal is not just better management of costs. It's also about improving customer engagement, getting more insights from data and boosting growth. While cost savings will remain a 'must have' it is certainly not the only goal of IA efforts.

2 Most IA initiatives are not yet up to scale or operate on an end-to-end process level, but expectations run high for returns on investment. More than half of those surveyed believe they can scale up their IA initiatives within 12 months. The short history of IA efforts, however, leads us to believe these projections are optimistic.

3 While there is investment in IA broadly, only 10 percent of respondents are integrating solutions across its various dimensions: automation, artificial intelligence and smart analytics. While initial fragmentation of efforts is not to be unexpected, organizations need to move quickly to understand how, when and where to integrate efforts across technologies to fully optimize their potential.

4 Piecemeal or disorganized initiatives remain a stumbling block. Fewer than 10 percent of respondent organizations indicated they approach IA management and implementation from an enterprise-wide perspective. While this is understandable in the early stages of IA adoption, organizations must move to better coordinate and integrate efforts and must better prioritize efforts that should receive maximum funding and support going forward.

5 Wide and quick adoption of IA is constrained by lack of a leadership mandate and vision to carry it through and rally employees who face changing roles and skill upgrading, or possibly job loss. Caution or prudence has its place with any new set of technologies but organizations must overcome them as quickly as possible and not let them become institutionalized.

Business leaders need to recognize and pro-actively manage the why, what and how of fully exploiting the potential of IA. More than just cost savings or gaining operational efficiencies, IA is about fundamentally changing how an organization operates from the standpoint of internal operations, how it deals with its customers and suppliers and how it delivers its core products and services. Handled from a holistic perspective, leadership vision and organizational change will foster the development of a smart automation strategy.

Today's state of the art in IA

Intelligent automation is the catch-all phrase for disruptive technologies. It includes robotic process automation (RPA), artificial intelligence (AI), machine learning (ML), cognitive computing (CC), and smart analytics.
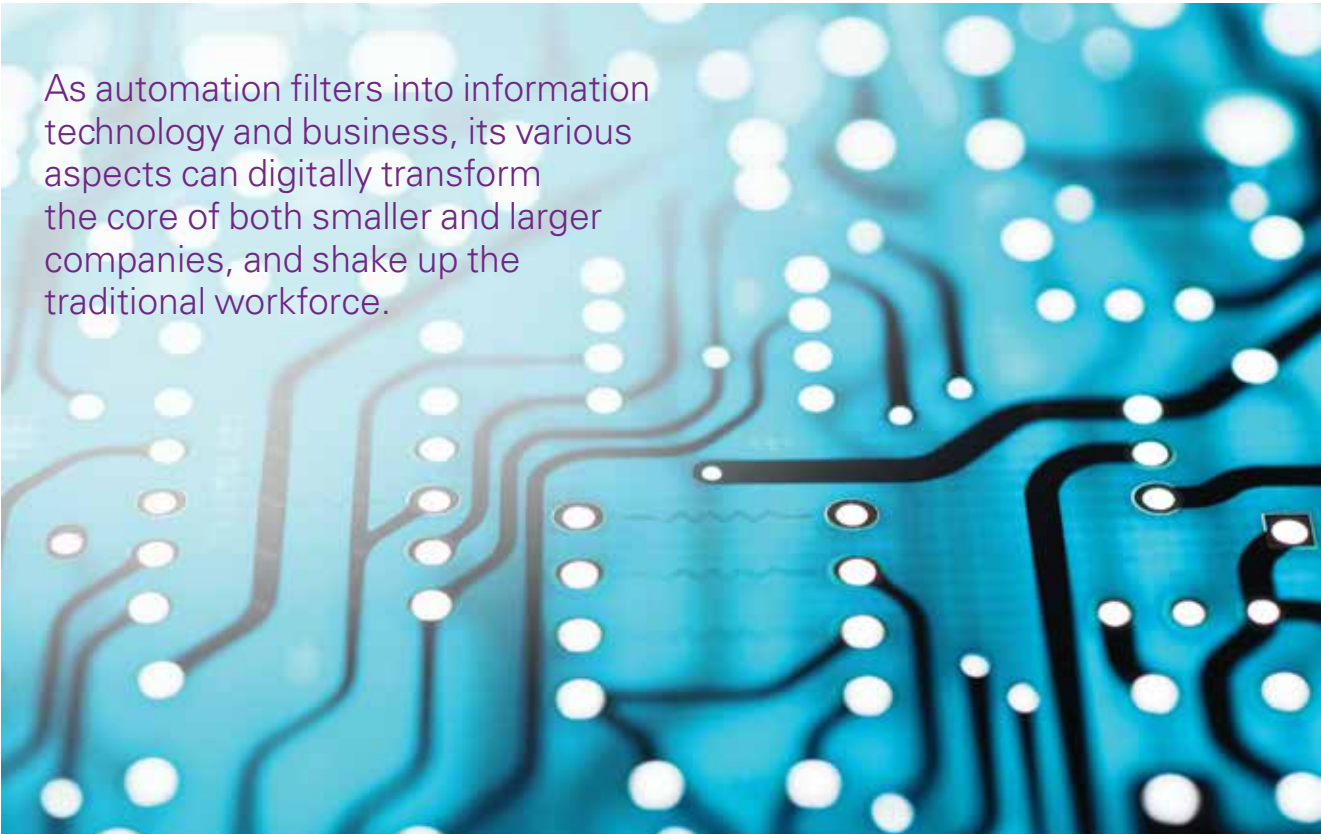
Artificial intelligence (AI): Artificial intelligence is the capability of a machine to imitate intelligent human behavior.

Machine learning (ML): Machine learning is an application of artificial intelligence that enables systems to automatically learn and improve from experience without being explicitly programmed. Machine learning focuses on the development of computer programs that can access data and use it to learn for themselves.

Cognitive computing (CC): Cognitive computing is the simulation of human thought processes in a computerized model. Cognitive computing involves self-learning systems that use data mining, pattern recognition and natural language processing to mimic the way the human brain works.

Robotic process automation (RPA): Robotic process automation enables organizations to configure computer software or a 'bot' to capture and interpret existing applications for processing a transaction, manipulating data, triggering responses and communicating with other digital systems.
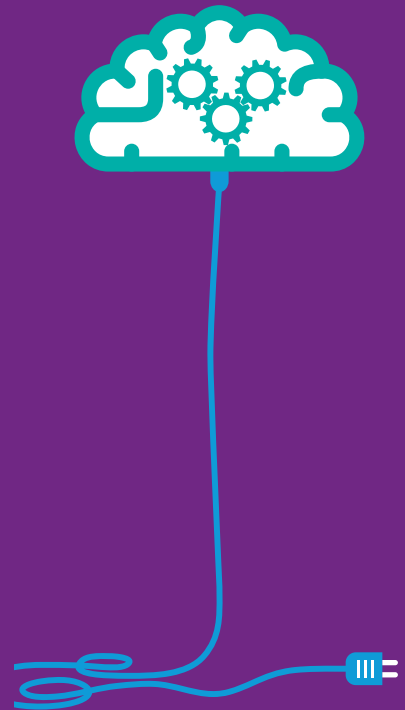
As automation filters into information technology and business, its various aspects can digitally transform the core of both smaller and larger companies, and shake up the traditional workforce.

There are several conclusions to make from this research, complemented by both clients and our own experiences.

— While most organizations are increasingly active with their IA efforts, especially with RPA, these efforts are too often uncoordinated and unintegrated across the organization and lack a prioritization of efforts.

— Organizations are struggling to take pilot efforts to scale. There are numerous 'toes in the water' but few fully functional deployments of IA efforts. Even RPA has proven more challenging and complex to implement than anticipated.

— Organizations typically do not have sufficient skills or resources to undertake IA efforts and subsequently manage them. This is especially the case with machine learning and artificial intelligence. Organizations need to be realistic about what resources can be harvested internally and what resources can be leveraged via third-party service providers and vendors.

— Organizations are struggling to determine how to best address the impact of IA (especially RPA and its associated potential to eliminate jobs) on the organization. Change management strategies and plans are typically inadequate and too much lip service is being paid to talk down the potential for job loss as well as the potential for retraining and reskilling.

Learning to love IA

Elevating customer experience and unleashing data to drive both insights and sales growth are the top drivers for enterprise investment in IA. A common starting point for IA, robotics process automation (RPA) offers the potential for significant cost savings, and efficiency gains via job automation. But cost savings alone should not be the only end-game for IA investments. As IA becomes more infused within organizations, business leaders indicate that their strategic objectives are increasingly about revenue growth followed closely by better analysis of data and improved operating insights. On a more tactical, operational level, the survey highlighted better-quality and streamlined customer service. But less than one percent indicated cost savings or headcount reduction as a key operational goal.
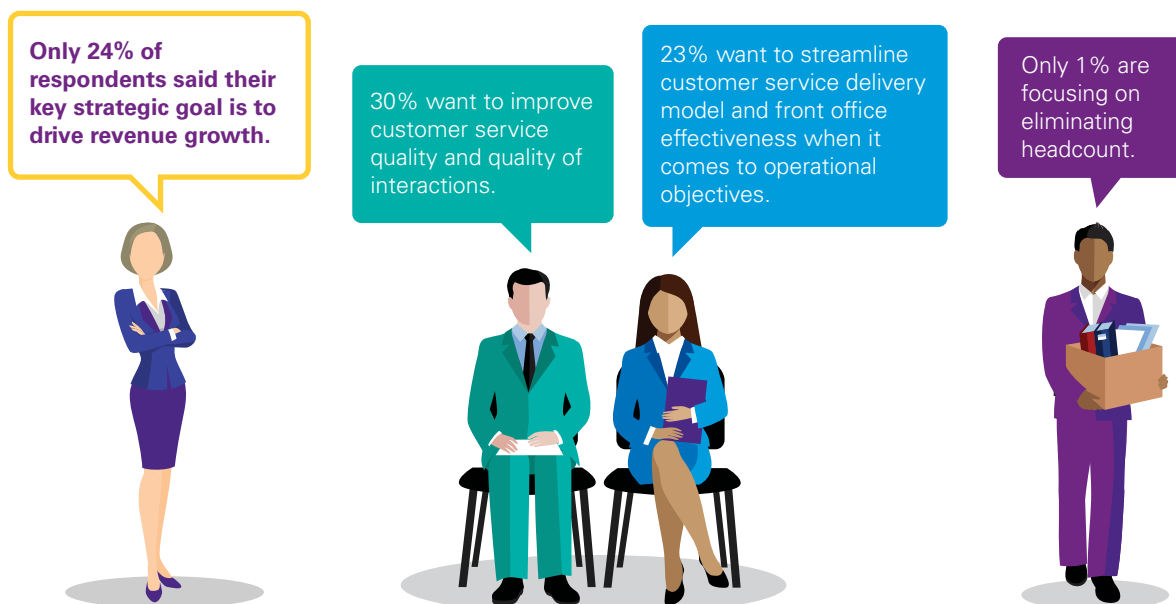
INSIGHT

Ericsson Group

Rickard Wieselfors, VP, Head of Ericsson Group, Automation & Analytics shared his organization's goals for IA, which underscore the need for specific and actionable objectives:

"Three years ago, Ericsson began to lay out a comprehensive digital transformation strategy for the organization to become a data-driven, customer-centric company. For automation, Ericsson set itself ambitious and measurable targets: to ensure all repetitive tasks were automated by 2021, to bring savings of 500 million Swedish kronor (~US$56M) by the end of 2018, and to achieve complete automation maturity across all 20 main Ericsson units within the next few years."
Rickard Wieselfors,
VP, Head of Ericsson Group, Automation & Analytics

Ericsson's objective, while inclusive of cost savings, established an essential direction for their broad digital and supporting automation initiatives.

Figure 1 — Strategic and operational goals concentrate on IA to drive top line growth, not reduce FTEs.

Only 24% of respondents said their key strategic goal is to drive revenue growth.

30% want to improve customer service quality and quality of interactions.

23% want to streamline customer service delivery model and front office effectiveness when it comes to operational objectives.

Only 1% are focusing on eliminating headcount.

Source: HFS Research in conjunction with KPMG International, State of intelligent automation, 2019
Sample = 590 business leaders including 100 C-level executives

Big bucks for big bets

Organizations are getting more ambitious with their IA investment plans. The survey found that more than half have invested in excess of US$10 million in IA while more than one-third have already allocated US$50 million or more. These funding levels suggest this field is moving beyond pilots and into more scaled initiatives. These larger investment amounts that typically include cloud and ancillary infrastructure expenses are actually probably understated. The full costs of an internal transition (including human resource issues) may not be taken entirely into account when viewed from a tech-centric only perspective.

INSIGHT

Corning Inc.

Chad Keenan, Director of Shared Services at Corning shared his thoughts on the importance of having a defined period to help ensure investments are generating expected yield.

> "For our initial scope, we had an 18-month payback period. 18 months between investment and process redesign, and sustaining and operating it to achieve paybacks."
> **Chad Keenan,**
> **Director of Shared Services at Corning Inc.**

Corning started their IA journey in its shared services organization, which is where they applied the initial payback period metric. Based on its success and proven and quantified benefit, they now use IA in processes globally — including eight regions where they use it in reporting, requisition to pay and order to pay. It has also extended to commercial operations and supply chain management.

Figure 2 — Big spends are for the big bets. Significant IA investments are on the table.
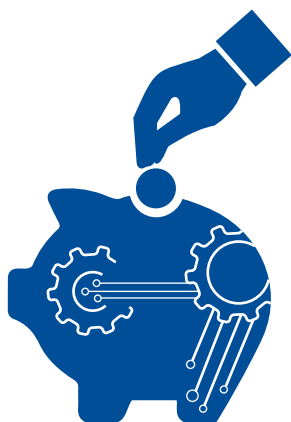
More than 30% of enterprises are already investing

more than $50M in IA technologies.

Source: HFS Research in conjunction with KPMG International, State of intelligent automation, 2019
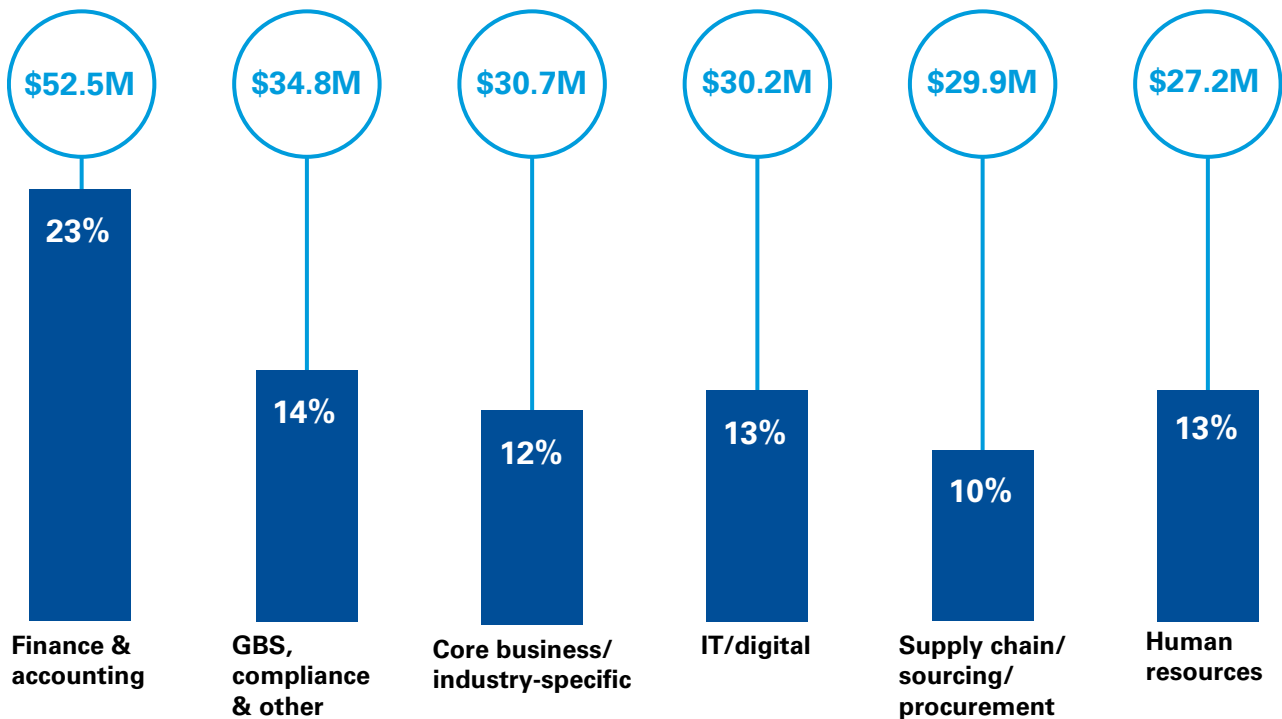Sample = 590 business leaders including 100 C-level executives

Where the investment is flowing

Digging a little deeper into IA investment within specific functions paints a picture of what's being prioritized for spending. The study found average spending of under US$10 million for the majority of functions. By far the highest expenditure levels were for the finance and accounting category, marked by 23 percent of respondents as receiving investment of slightly more than US$50 million, a spending level that likely reflects ancillary technologies such as cloud services. Finance and accounting has proven to be a top priority for many automation initiatives. Group benefits strategies and compliance activities were the next areas prioritized for funding with average expenditures of US$35 million.

At the midpoint of investment were core business functions (such as underwriting or mortgage processing). Here, 12 percent indicated spending above the US$50 million mark — a notable finding illustrating that investment is aligned with primary revenue generators. Both human resources and information technology and digital functions showed 13 percent spending more than US$50 million, with human resources slightly more heavily funded. Going down the line, supply chain management, sourcing and procurement were highlighted by 10 percent for expenditures in excess of US$50 million. At the low end of the spectrum was customer service, sales and marketing, marked by all respondents as under US$10 million in investment.

Figure 3 — Finance and accounting function leads 2018 enterprise investment in IA.

$52.5M	$34.8M	$30.7M	$30.2M	$29.9M	$27.2M
23%	14%	12%	13%	10%	13%
Finance & accounting	GBS, compliance & other	Core business/ industry-specific	IT/digital	Supply chain/ sourcing/ procurement	Human resources

● US$50M+

What level of intelligent automation-related investment does your function have today?

Source: HFS Research in conjunction with KPMG International, State of intelligent automation, 2019
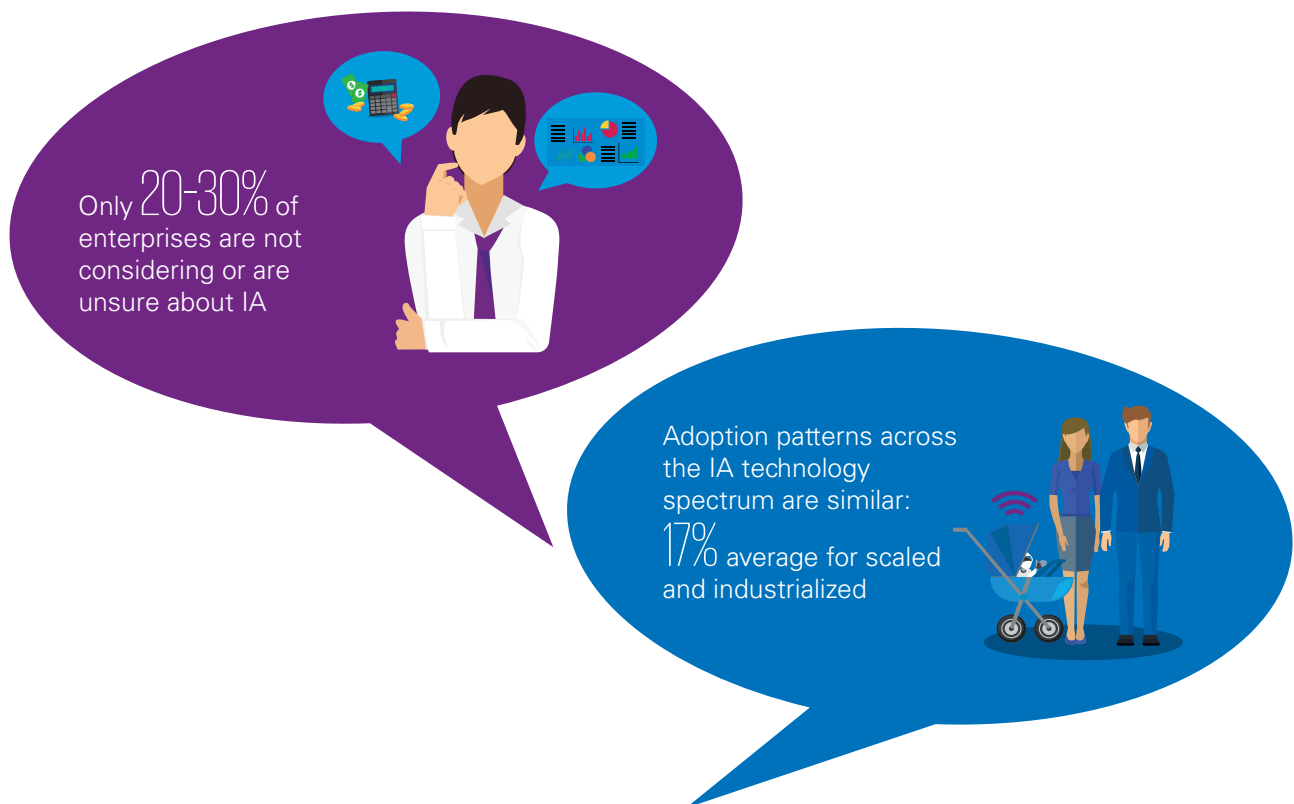Sample = 590 business leaders including 100 C-level executives

No 'silver bullet'

Most organizations are investing in the full spectrum of intelligent automation technologies, typically prioritizing RPA, but also more frequently exploring machine learning and artificial intelligence opportunities. The study found that two-thirds of respondents are adopting many elements of IA. This ranges from piloting and implementing to scaling up and institutionalizing best practices.

The technology being experimented with or piloted the most is the field of artificial intelligence, earmarked by 36 percent of respondents. Respondents said that

machine learning and smart analytics were the AI technologies being implemented the most, with each receiving 31 percent of responses. Smart analytics was flagged at the top as most scaled while robotics process automation was at the bottom rung, a surprisingly low result given its role as a gateway technology. Overall, only 17 percent on average responded that they have scaled up or industrialized IA technologies. Moreover, another 30 percent of respondent organizations are opting not to invest or are unsure of their plans for IA.

Figure 4 — Big plans to adopt IA but few results

Only 20-30% of enterprises are not considering or are unsure about IA

Adoption patterns across the IA technology spectrum are similar: 17% average for scaled and industrialized

What is the current state of adoption of the following intelligent automation (IA) technologies in your organization?

Source: HFS Research in conjunction with KPMG International, State of intelligent automation, 2019
Sample = 590 business leaders including 100 C-level executives

# INSIGHT

InterContinental Hotels Group (IHG)

At IHG, an integrated approach to IA was applied to tier 1 and 2 technical support for corporate employees and hotel staff globally, which included multiple languages and 20k people globally. Over 56 percent of all their requests were FAQs and password resets. Their objective was to free up people to focus on the other 44 percent — the difficult work. Indeed, the company's stated intention was to "expand our organization without expanding".

Scot Whigham, former Director of IT Global Service & Support at IHG and current CEO at Function-AI commented on the integration of IA technologies to achieve desired functionality.

> "We started to identify three main technologies that you could combine to work as one ecosystem — a digital employee — which starts to resemble what people envisage as AI. These include 1) engagement; 2) RPA; 3) analytics. If you combine them into one ecosystem to execute on something, and to learn from that engagement and provide analytics and source of information that wasn't specific to the task in hand, but was relevant to the interaction and let you do more than original task, then you start to feel like there's an entity you can have a relationship with. Hence, a digital employee. It can suggest more than you asked for. It could interpret and help you find things you didn't know to look for. It became a framework — not ML, not text to speech, not robotics — a digital employee. A persona."
> **Scot Whigham,**
> **Former Director of IT Global Service & Support at IHG and current CEO of Function-AI**
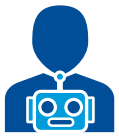
Mini-IAs

Despite ongoing investment and adoption of various AI technologies, strategies to put them into practice are often splintered or piecemeal. For instance, more than one-third indicated their primary focus right now is on one element of IA technology, while only 11 percent noted they are leveraging the power of all three technologies under the IA umbrella: automation, analytics and artificial intelligence. Another 16 percent said alignment is emerging across all three technology fields. As businesses integrate IA solutions deeper and more broadly into their organizations, look for more holistic approaches.

Figure 5 — Enterprise solutions leverage multiple IA technologies.

While more than 60% of enterprises are leveraging multiple IA technologies, only 11% are leveraging an integrated solution approach.

How well are you able to develop integrated solutions leveraging multiple intelligent automation technologies to solve business problems?

Source: HFS Research in conjunction with KPMG International, State of intelligent automation, 2019
Sample = 590 business leaders including 100 C-level executives

INSIGHT

Break down the barriers

Scaling up IA technologies across departments and business functions can be difficult due to budgetary constraints, lack of an orchestrated approach, unclear business objectives and lack of understanding about what more complex areas such as artificial intelligence actually can do. These points were underscored by **Dr. Thomas Erwin, Global Head of KPMG Lighthouse, Center of Excellence for Intelligent Automation and Data & Analytics, KPMG International and Carina Schöllmann, Global Execution Director, KPMG Lighthouse, KPMG International.**

The numerous challenges can lead to implementation being handled "in pillars rather than in a comprehensive strategy," observes Schöllmann. What's needed to overcome that more narrow approach is consensus and a harmonized team direction that can lead to successful use cases, and in turn, break out from these pillars and affect to other parts of the business. She adds that many businesses have already made some investment and understand that "the technologies are not magic — but hard work and dedication." As more move beyond this baseline or exploration experience, she foresees that they can "bring the conversation to a more strategic level."

Dr. Erwin concurs, and counsels, "Don't worry about the techy blurry stuff or get hung up on the technicalities. Stay focused on the business objectives."

Additionally, he advises that business leaders, the CFO included, should figure out what the company objectives are and then focus on them — revenue growth, operational savings, risk avoidance and a competitive edge. "Failure is an eventuality if you don't move forward," he advises. "Your competition is thinking daily about how to beat you and can be more effective."

Jumping hurdles to win

With so much riding on the promise of IA, business leaders were queried about their biggest challenges in executing on its potential. They identified the need to both scale up vertically and broaden the scope of their efforts across functions and processes.

Other notable challenges pinpointed included several managerial issues: how much financial investment and supporting infrastructure such as cloud is required,

who's accountable for driving the agenda to get a positive payback, and concerns about the impact on employees. However, in some isolated cases, it may be advantageous to greenlight projects — even if they don't have a clear and immediate ROI — if they somehow contribute to a new competitive advantage, notes Peter Evans, Principal, Innovation and Enterprise Solutions at KPMG in the US.
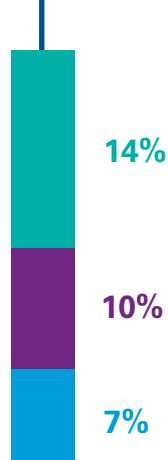
Figure 6 — Scale is the biggest inhibitor to IA success.

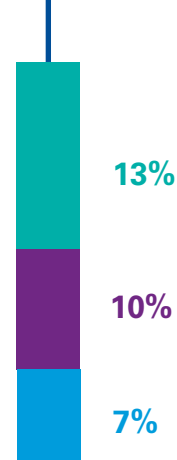**What are the top three inhibitors that are holding you back from achieving strategic AND operational goals?**

Need more scale with IA to achieve objectives

16%

12%

6%
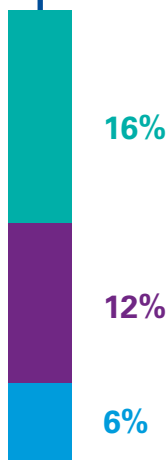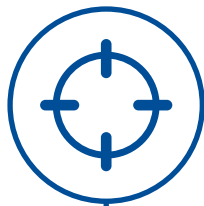
Uncertainty about the financial investment needed in IA

14%

10%

7%

Lack of organizational clarity and accountability for driving IA agenda

13%

10%

7%

● Rank 1　　　● Rank 2　　　● Rank 3

Source: HFS Research in conjunction with KPMG International, State of intelligent automation, 2019
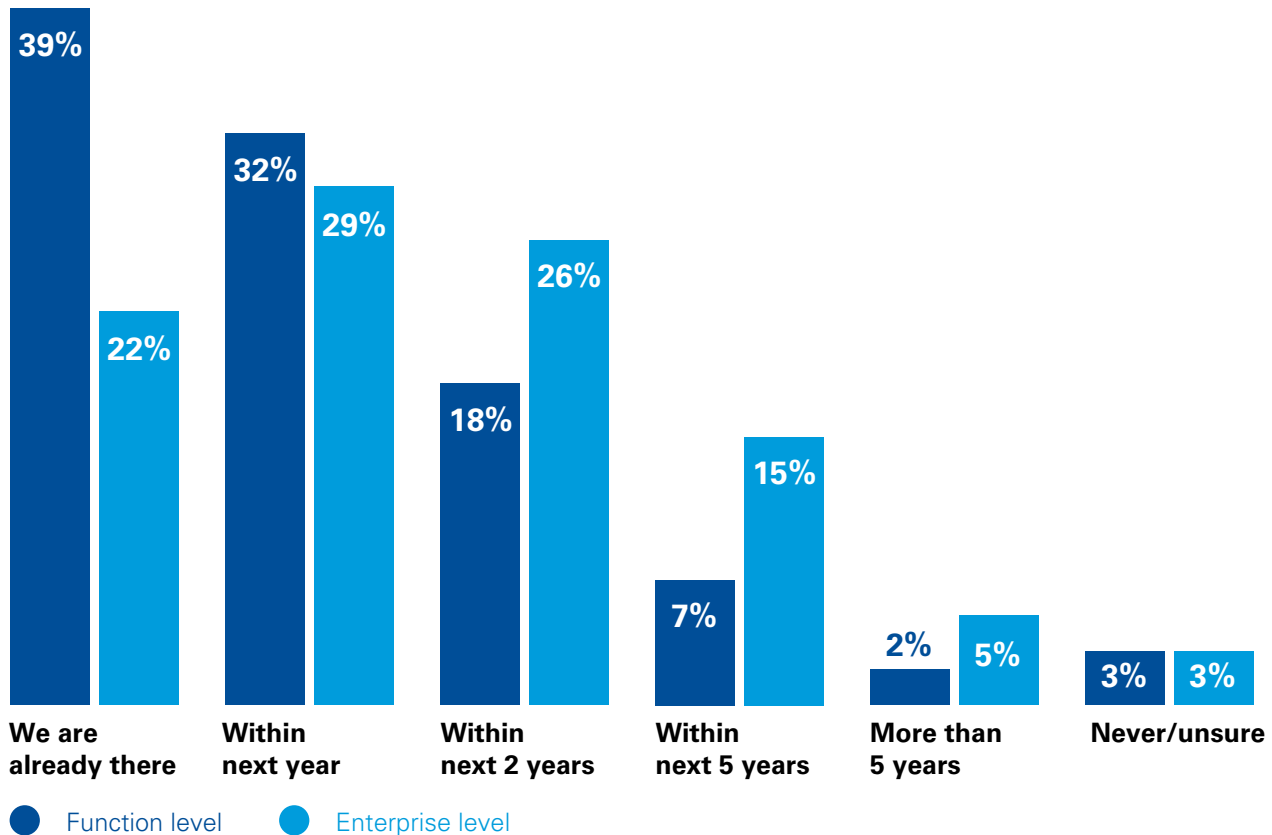Sample = 590 business leaders including 100 C-level executives

Warp speed ahead

The rapid pace of advancement can be clearly seen in a surprisingly high (71 percent) number of respondents who say that their adoption of IA at a functional level is already at scale or will be there within one year. More than half (51 percent) of respondents indicated that even the (much harder) enterprise-wide use of IA will be mastered by next year.

The inevitable conclusion, for now, is that while business leaders strongly believe their IA programs can grow at a fast pace, they struggle to get the fundamentals right. It takes pulling the right levers at the right time to achieve success and to stay the course.

Figure 7 — Enterprises are moving at warp speed to scale IA programs.

When will your adoption of intelligent automation (IA) be scaled-up and industrialized?

	We are already there	Within next year	Within next 2 years	Within next 5 years	More than 5 years	Never/unsure
Function level	39%	32%	18%	7%	2%	3%
Enterprise level	22%	29%	26%	15%	5%	3%

● Function level   ● Enterprise level

Source: HFS Research in conjunction with KPMG International, State of intelligent automation, 2019
Sample = 590 business leaders including 100 C-level executives

INSIGHT

Global pharmaceutical

"Our finance team uses RPA in its daily work. Our RPA program has now gone broader from finance to enterprise. We have actually handed RPA off to IT, who then built a robust enterprise approach. RPA has moved from supporting tasks to processes within our Global Financial Services (GFS) to functions outside."
Finance Process Leader and RPA champion at a global pharmaceutical company

71% of respondents believe that their function-level IA programs are deemed to either be at scale or will be there within 1 year.

The enterprise view of scaled IA programs suggests 51% of respondents will have fully scaled and industrialized IA programs by next year.
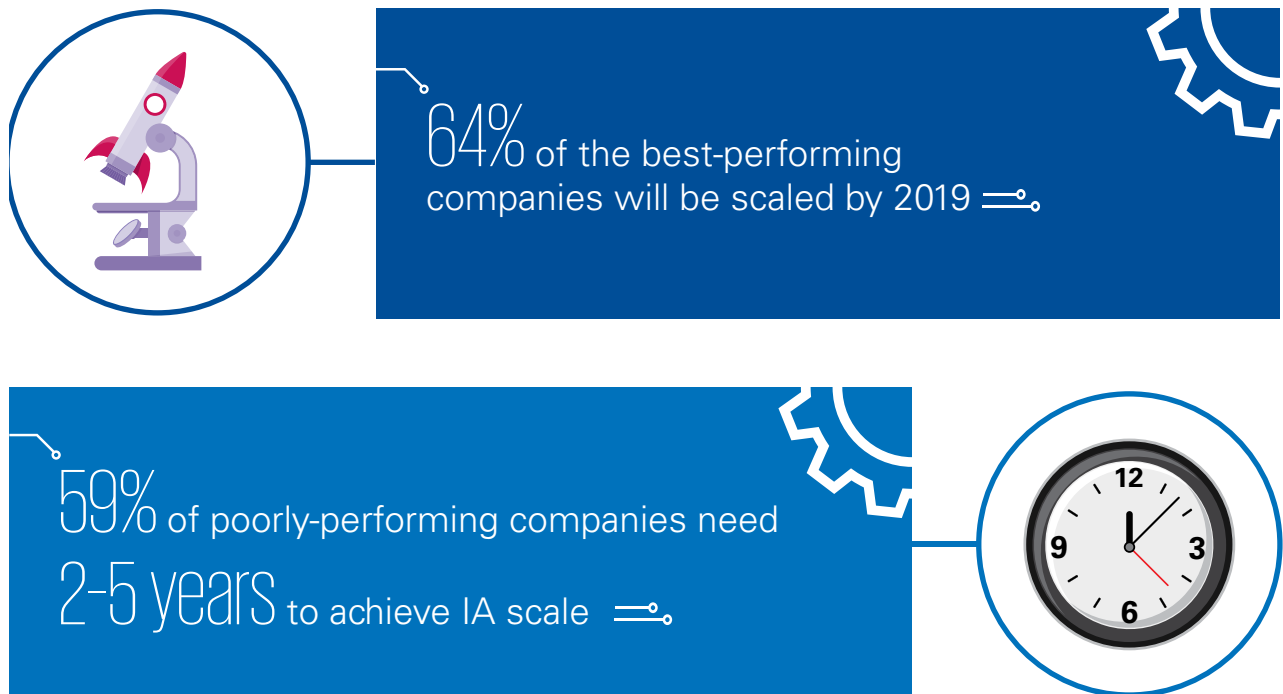
The pace for profit

Speed of execution is critical to achieving a first-mover advantage, competitive edge and financial success.

Still, this survey found a distinct correlation between IA investments and top financial performance. The reverse is also true: less time and fewer resources equal poorer performance. Getting past a tipping point is an ideal and may not be the reality, particularly for companies that are struggling to break even. But the need to make investments is still paramount even in tough times.

Figure 8 — Speed to scale IA yields financial returns.

64% of the best-performing companies will be scaled by 2019

59% of poorly-performing companies need 2-5 years to achieve IA scale

The confidence factor

Optimistically, two-thirds of survey respondents believe they can confidently manage 'sizing up' IA projects and initiatives. That takes a corporate culture change, and along with that, authority and accountability. Figuring out who will take charge of the agenda in unchartered territory is one large step. Another is dealing with displaced staff and cultivating talent in newer, digital arenas.

The study surfaced a whole host of issues that business leaders are confronted with when managing change to unleash AI's potential. The foremost issues identified are the need for more in-house talent to support IA advancements and, significantly, more senior management leadership and vision to set the agenda to embrace change.
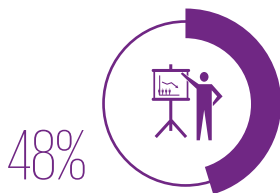
Figure 9 — Companies lack confidence in overcoming inhibitors to IA success.
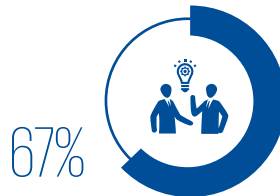
67%

are confident they can manage their need for more scale with IA to achieve objectives
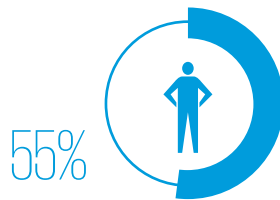
55%

are confident they can manage their lack of in-house talent to support IA

48%

believe they can manage their lack of senior management mandate and vision to deploy IA

How confident are you in managing the challenges that are holding you back over the next 12–18 months?

Source: HFS Research in conjunction with KPMG International, State of intelligent automation, 2019
Sample = 590 business leaders including 100 C-level executives

INSIGHT

Proactive culture shift for workforce change

Addressing corporate culture and human resource issues is critical to the success of IA efforts. Businesses must be prepared to be proactive about change, and instill that spirit within the organization.

> "Preparing for success means preparing to change the status quo and the way you run things," comments **Vinodh Swaminathan**, **Principal, Intelligent Automation, Cognitive and Artificial Intelligence, Innovation & Enterprise Solutions at KPMG in the US**

This can mean conditioning staff to understand their jobs are likely to be redesigned. But it can be less painful if managers figure out how staff can be reallocated and retrained in a new era of breakthrough technologies such as augmented reality and artificial intelligence. Too often, a mismatch occurs. Too many manual labor workers who don't know how to evolve in this machine learning age and not enough data scientists who can maximize the upcoming convergence of technologies, will be an ongoing managerial challenge.
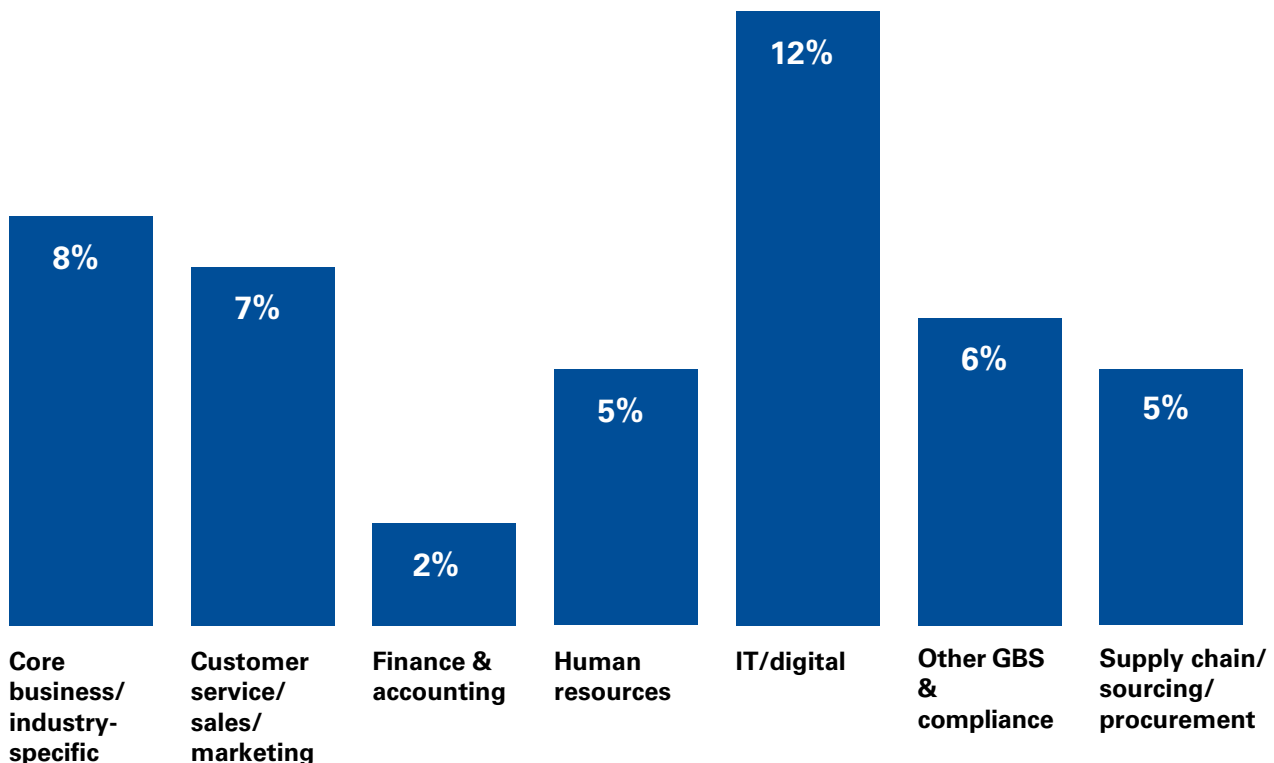
Blending missions with pilots

What accounts for the low confidence in visionary leadership? This issue relates to the finding that few (12 percent) are taking a company-wide approach to managing IA initiatives. Instead, most organizations focus on a limited range of tasks or specific functions. For instance, in finance and human resources, more than one-third of firms are focusing on small scale tasks that can be easily automated. In core business units, customer service and supply chain management, one-third are exploring IA's potential more broadly, across entire functions or business units. Striking a balance between specific pilots and a strategic mission can be daunting but is necessary to get to smart automation.

Figure 10 — Enterprises manage IA initiatives with a process and/or functional lens, but an enterprise-wide approach to IA is rare.

We have an enterprise-wide approach to intelligent automation:

8%	7%	2%	5%	12%	6%	5%
Core business/ industry-specific	Customer service/ sales/ marketing	Finance & accounting	Human resources	IT/digital	Other GBS & compliance	Supply chain/ sourcing/ procurement

Source: HFS Research in conjunction with KPMG International, State of intelligent automation, 2019
Sample = 590 business leaders including 100 C-level executives

INSIGHT

USAA

Craig Libby, Head of Supply Chain Risk and Compliance, Policies and Procedures, Supplier Governance at USAA shared some perspective on what drives the formulation of IA management strategies.

> "I would love to say there was a formal deployment method in our RPA deployment, but everything was transactionally-defined. We would learn and apply as we went. We knew other insurance carriers were going down this route, but there wasn't some initial grand plan around IA for us. BFSI organizations normally have highly manual processes, but you can't keep humans doing all this manual work long-term and remain compliant given the increased regulatory scrutiny. The whole space is now looking at automation. While we deployed RPA business unit-by-business unit, it was definitely an enterprise initiative in broad sense."
>
> **Craig Libby,**
> **Head of Supply Chain Risk and Compliance,**
> **Policies and Procedures, Supplier Governance at USAA**

For USAA the unifying leadership mandate that helped them scale and create an enterprise-wide approach was reduction of manual processes. USAA started their IA journey about 4.5 years ago. Its insurance business presented the initial impetus for them to embrace IA — they wanted to be able to analyze and predict weather trends. Looking to the future, USAA's aim is to use IA to reduce as many high-risk manual processes as possible — going from hindsight to foresight, to predictive and probabilistic capabilities. And they want to continue to build internal skills — improving baseline competency and skill sets of employees.

Why it's slow going

Understanding why most businesses are going slow with IA can be traced back to three factors: who's really in charge of leading the initiative, how integrated IA is within the business, and how best practices are picked up and learned.
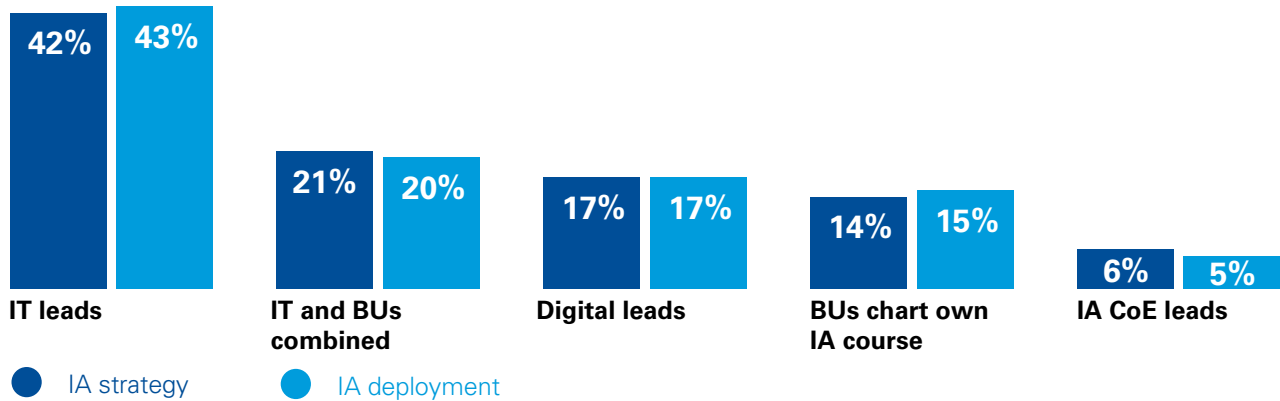
The study found that it's typically information technology that takes charge of getting IA deployed. Less than one-fifth have a combined IT and business approach. This

scenario makes for a less than ideal outcome if a limited number of departments actually get involved.

Just as telling, the survey indicates that few have established Centers of Excellence (COE) to learn from successes and centralize best practices. Centers of Excellence are the most effective, of course, when an organization is farther along the IA curve and more insights and lessons can be drawn from approaches, measurements and inputs from IT and business.

Figure 11 — The prevailing approach to IA strategy and deployment is IT-led.

Who leads intelligent automation strategy and deployment for your company?

IT leads	IT and BUs combined	Digital leads	BUs chart own IA course	IA CoE leads
42% 43%	21% 20%	17% 17%	14% 15%	6% 5%

● IA strategy   ● IA deployment

Source: HFS Research in conjunction with KPMG International, State of intelligent automation, 2019
Sample = 590 business leaders including 100 C-level executives

INSIGHT

Top ten bank

The Head of Intelligent Automation at a top ten US bank commented on his experience in establishing an effective IA Center of Excellence (CoE). His firm started its IA journey with RPA in early 2017 and continues to scale and embrace additional IA technologies.

"We established a business-led, federated CoE model. The CoE was initially run by a digital team that sat between IT and the business, which allowed the program to jumpstart. It now resides within the largest operations shared service organization providing IA as a service to the enterprise. We used the CoE to centralize all IA program components — from process identification on the front-end to process monitoring on the back-end. The business units have been educated by various training formats to come up with ideas that matter. Across the IA lifecycle, the balance of responsibility is shared between the IA CoE and the business. The federated model and a CoE that sits between IT and the business has been effective and drives credibility and uptake."
Head of Intelligent Automation at a top ten US bank

Breaking boundaries

Going forward, the consensus is that businesses will broaden the scope of IA management from functions by region to enterprise-wide globally. More than one-third (38 percent) of organizations polled are moving in this direction from only 10 percent in 2018.

But managing this transition across functions and technologies where most IA resides within enterprise-wide mandates does require some good balancing techniques.
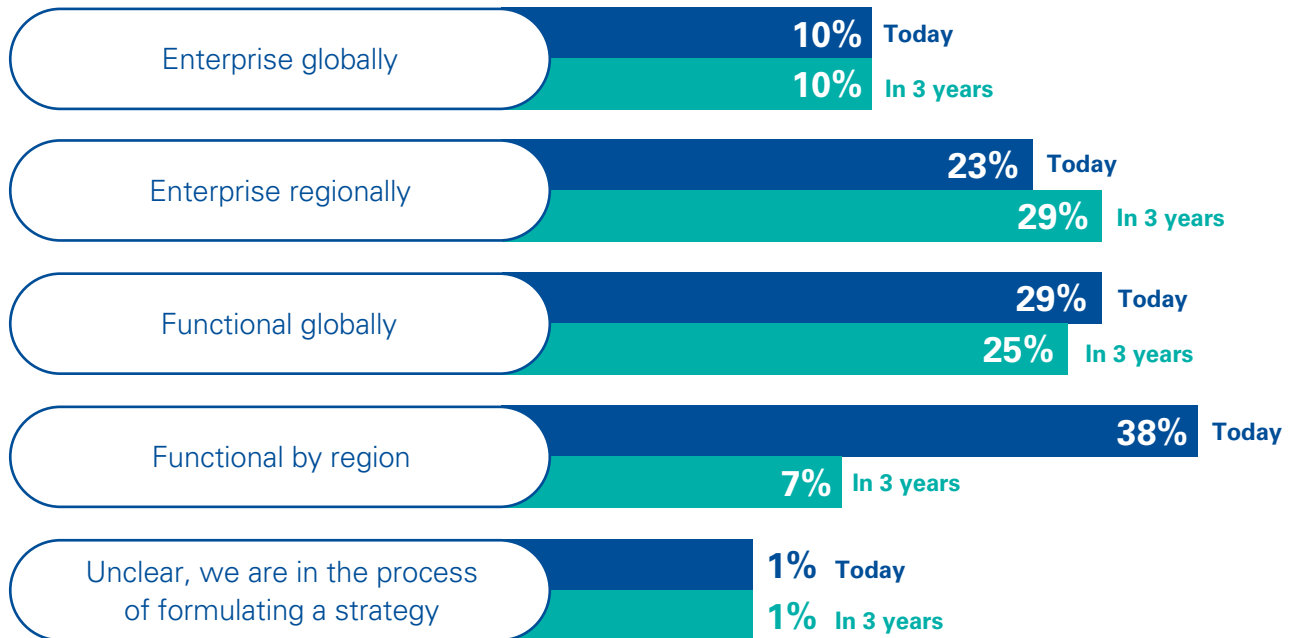
INSIGHT

Mars Global

Anoop Aggarwal, Vice President, Finance, Digital & Staff Officer at Mars Global commented on how his firm addressed the scale challenge:

"We have been able to achieve scale by cultivating strong understanding with senior leadership. We did this by kicking off our IA journey with an immersion program that addressed what transformation would mean in finance in terms of humans, technology, culture and business. We worked through this for 6 months and included senior leadership. Our finance group is way ahead of groups that did not do this. Scale comes from adoption and acceptance."

Anoop Aggarwal,
Vice President, Finance, Digital & Staff Officer at Mars Global

Figure 12 — Organizational approaches to IA are shifting.

	Today	In 3 years
Enterprise globally	10%	10%
Enterprise regionally	23%	29%
Functional globally	29%	25%
Functional by region	38%	7%
Unclear, we are in the process of formulating a strategy	1%	1%

What is the primary way that your intelligent automation (IA) initiatives are organized today? What will this look like in 3 years?

Source: HFS Research in conjunction with KPMG International, State of intelligent automation, 2019
Sample = 590 business leaders including 100 C-level executives

Is reskilling the magic potion?

For business executives dealing with the potentially tumultuous impact of intelligent automation on their workforces, addressing its impact is a long-term proposition.

Intelligent automation's impact on jobs, both in terms of partial or full elimination of work roles or, on the flip side, empowering workers with new skills and insights, is already a reality in the market. Research results find optimism about the impact IA will have on jobs — for example, approximately one-half of respondents surveyed say automation will impact fewer than 20 percent of their staff while the other half peg the impact as affecting more than 20 percent. But we feel these numbers are overly optimistic. The reality is IA will eliminate white collar jobs. Organizations need to proactively address this reality.

The bigger question is how leaders are handling job displacement. Retraining tops layoffs by a wide margin. This survey also found that only 14 percent anticipate letting workers go. What took precedence is retraining to deal with data (22 percent), to get into machine learning (21 percent), to work on new business needs (36 percent) and to specialize in an industry or domain (12 percent). The key challenge for organizations is how to actually conduct this retraining as well as determine which workers are best suited for this investment.

This retraining issue needs to be addressed by organizations' human resources departments. But what's also required is that business and executive management work with HR to define the collective workforce of the future and direct retraining and reskilling efforts toward that future.

Figure 13 — IA will almost certainly impact existing workforces and ways of working.

What proportion of your current workforce do you expect to be significantly impacted by IA in the next 2 years?
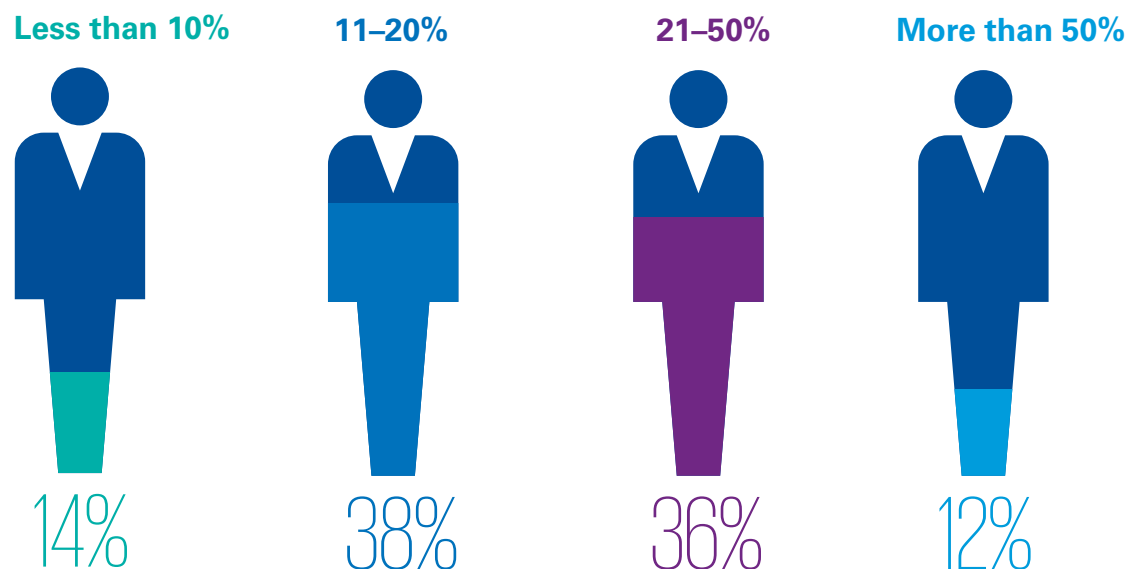
Less than 10%	11–20%	21–50%	More than 50%
14%	38%	36%	12%

Source: HFS Research in conjunction with KPMG International, State of intelligent automation, 2019
Sample = 590 business leaders including 100 C-level executives

Figure 13 — Emerging strategies for managing people displaced by IA.

How will your enterprise deal with displaced people as a result of IA implementation?
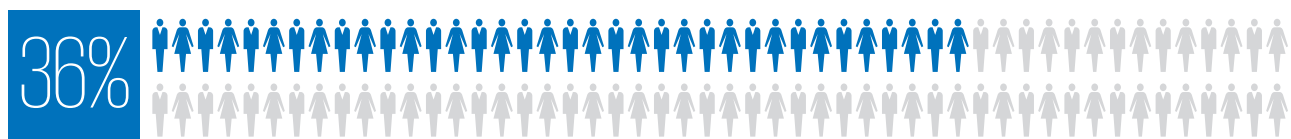
Let them go

14%

Retrain them to deal with data

22%

Retrain them on machine learning or artificial intelligence

21%

Retrain them to work on new business needs (exception handling, customer-facing roles, etc.)

36%

Retrain to specialize in an industry or process domain

12%

Source: HFS Research in conjunction with KPMG International, State of intelligent automation, 2019
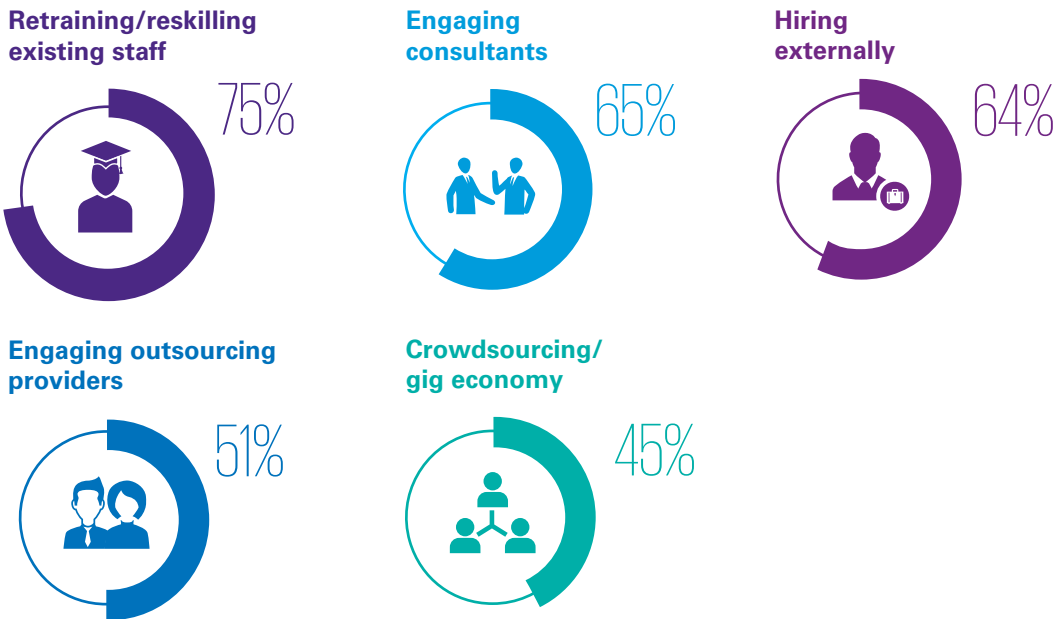Sample = 590 business leaders including 100 C-level executives

ⓘ 'Help wanted' signs

There is no singular approach to handling an increasing talent shortage for intelligent automation technologies. Business leaders indicated that they rely on a multi-faceted approach to addressing this challenge. Retraining and reskilling of existing staff was rated as the number one method, cited by three-quarters of those surveyed. But often, retraining is easier said than done effectively. Competition for talent is fierce and the talent available is often quite expensive, particularly for artificial intelligence. Engaging consultants and hiring externally is an additional means to infuse expertise internally; a solution pinpointed by two-thirds of respondents. Use of outsourcing providers, or hiring from crowdsourcing or use of contingent labor were also cited, though less often, as a means to augment talent needs.

Figure 14 — There is no singular approach to accessing IA talent.

Retraining/reskilling existing staff

75%

Engaging consultants

65%

Hiring externally

64%

Engaging outsourcing providers

51%

Crowdsourcing/ gig economy

45%

In which of the following ways are you accessing the intelligent automation (IA) talent that you need to drive your strategy?
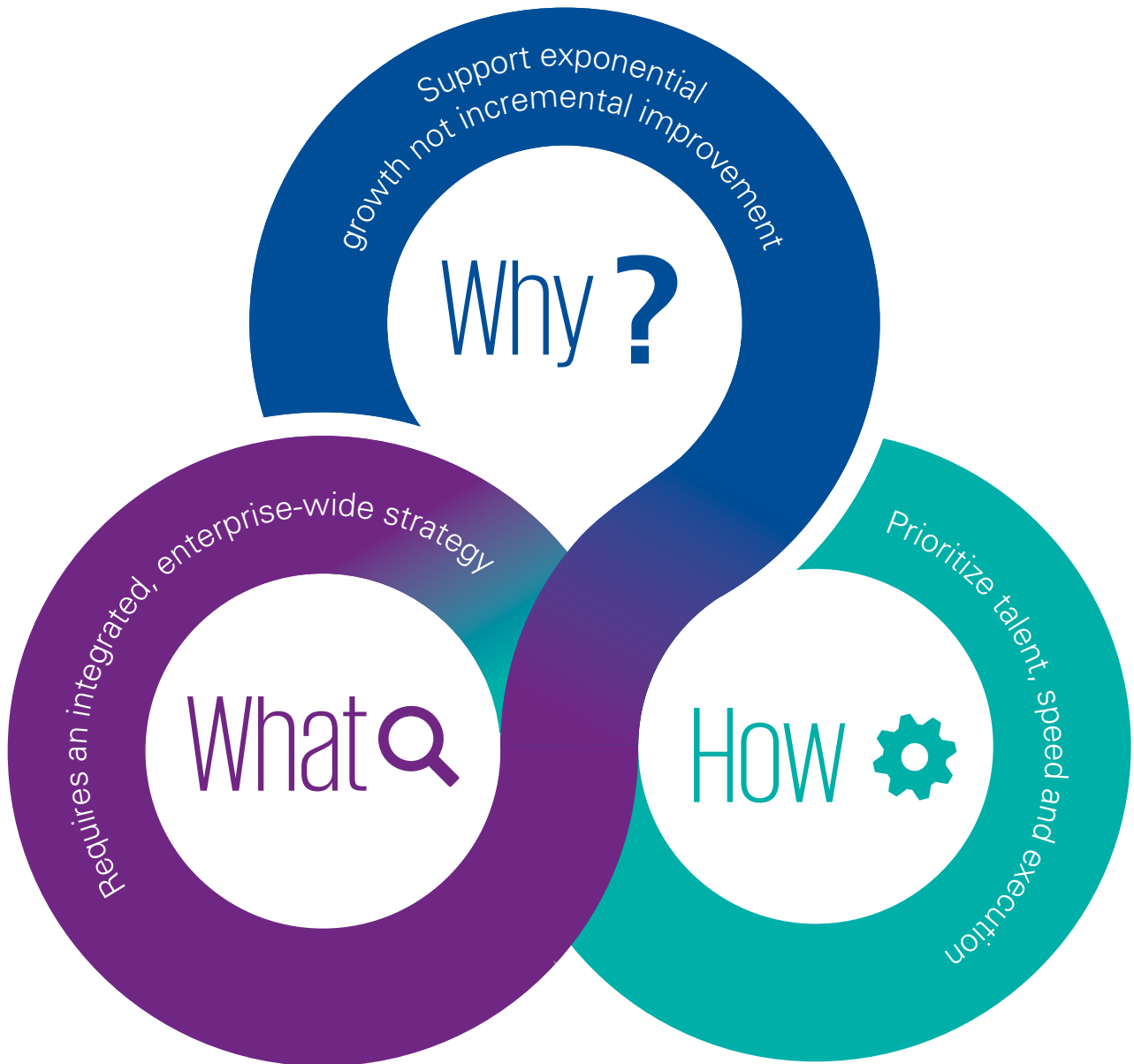
INSIGHT

Allied Irish Bank

Niall Cunnane, former Head of Digital Process Automation at Allied Irish Bank (AIB) shared his views on grappling with IA talent. AIB started its IA journey with RPA in early 2017, building on a Business Process Management capability and a strong focus on adhering to defined core growth pillars established as part of a financial rejuvenation plan.

"RPA engineers are in huge demand and it's difficult to attract talent directly. We use both strategic partners and train people internally but attrition for trained IA resources is a challenge. This will likely continue for another three to five years and then stabilize."
Niall Cunnane,
former Head of Digital Process Automation at Allied Irish Bank

The 'why, what and how' to success

Support exponential growth not incremental improvement

Why ?

Requires an integrated, enterprise-wide strategy

What 🔍

Prioritize talent, speed and execution

How ⚙

The 'Why'

Recognize and embrace exponential change.
Enterprises need to have a clear and supported vision for how their business will change through IA. Treating this transformation simply as technology change or a point in time human resources challenge will yield lackluster results. Integrated automation is the effective melding of technology, talent, organizational change and leadership to achieve exponential outcomes.

Create a clear leadership mandate and vision that perpetually answers the question 'Why IA?'
While projects can be led from the function level up, they have to be complemented by top-down ownership, mandate and vision — truly a programmatic approach to IA.

The 'What'

Embrace integration.
The majority of enterprises are investing in multiple IA technologies, but are using them in a siloed or piecemeal fashion. Deeper results and broader benefits can spring from combining technologies to solve problems or reinvent processes or functions.

Cultivate an enterprise-wide approach to IA.
Use the enterprise lens to break down the silos and elevate the best practices. This is critical for scale and the achievement of objectives.

The 'How'

Take a multi-faceted approach to IA talent.
You will never scale without the necessary talent to execute the strategy and operate the reinvented business with an automation mindset. Enterprises cite reskilling as an easy approach to minimizing layoffs while, at the same time, developing necessary talent.

Be aggressive and fast.
Set clear and strategic goals, look for ways to best achieve them and then execute decisively. Do this fast and expect failure. Take what works and scale. Take what does not and pivot or move on.

Ten action points

Clearly, most executives and decision-makers are keen to exploit the potential benefits of IA. They are investing significant resources into achieving their early IA goals and objectives. And they are hopeful they will soon start seeing the benefits at an enterprise level.

But the data also seem to suggest that organizations are struggling to achieve the type of scale they require. They are facing difficulties breaking down their internal functional silos. They are concerned about the impacts of IA on their workforce and development. And they are fighting to secure the talent they need.

We believe there are 10 steps that most organizations could take to help drive scale in IA:

1 Remember that intelligent automation, while enabled by technology, is a business issue and opportunity. Rethink your core operating models in the context of the advances IA can enable. It is about reinventing the business, not pursuing a series of technology investment projects.

2 Spearhead IA initiatives from a strategic perspective via a top-level champion who understands its value and has not only the vision to direct it enthusiastically and effectively, but also the support to rally the staff around.

3 Ensure coordinated collaboration between business units, executive management and the information technology group. IA is a business enabler but it is powered by IT.

4 Strategize to combine IA technologies that can work together rather than opt for piecemeal tactics to solve problems. Look to reinvent processes or functions. Ensure tight integration with other technology efforts such as cloud, blockchain and advanced data and analytics.

5 View IA from an enterprise level to scale up its usefulness within the business and broaden its scope to various functions. Everyone doing their own thing runs the risk of redundant efforts, diluted ROIs and underachievement of potential benefit. A coordinated enterprise approach will lead to consistent technologies, resources, governance and investment pools — and will elevate the best practices.

6 Ensure adequate capital, resources and time are allocated to retrain, reskill and upgrade staff (a challenging multi-year effort). Be realistic about just how many staff can be retrained.

7 Ensure adequate change management programs are in place to manage the transition from human to digital labor. Understand what new skills are required so as to retrain and reskill based on a defined workforce of the future.

8 Be creative in addressing IA skills shortages (including use of contingent labor and external service providers) to fill in the talent gap while your IA agenda matures and advances.
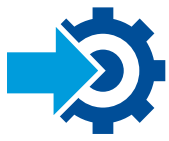
9 Embrace smart failures. Learn from those market leaders who aren't afraid to fail, but are masters in failing fast and then succeeding with what works.

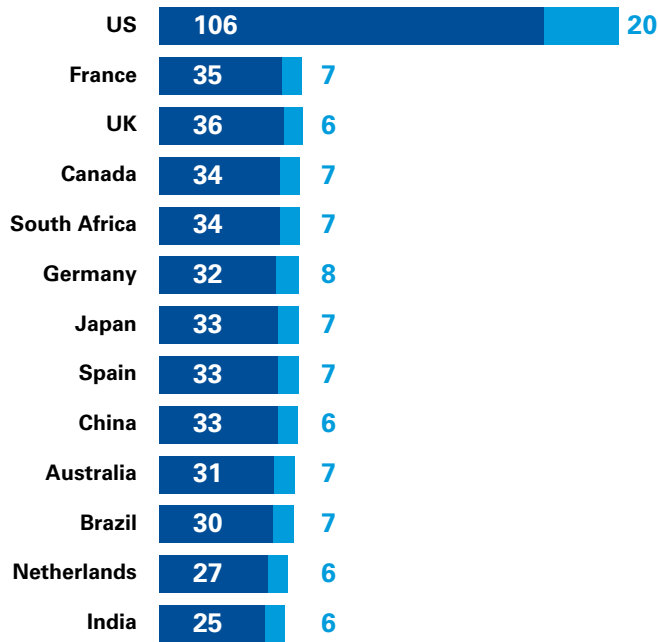**10** Learn how to pivot, learn from mistakes and be aggressive.
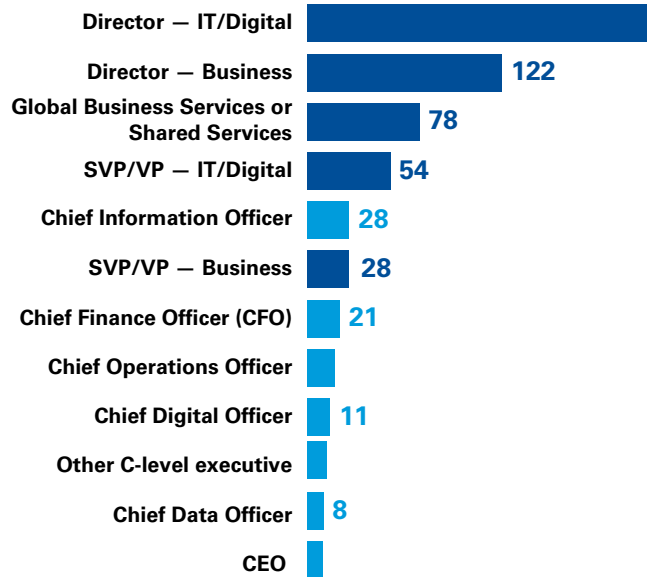
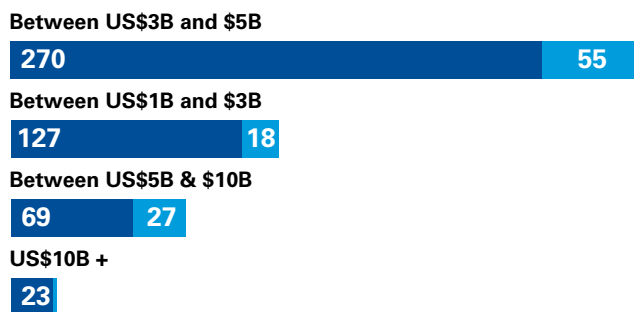# Methodology

Demographics

Geography

Country	VP and Director	C-Suite
US	106	20
France	35	7
UK	36	6
Canada	34	7
South Africa	34	7
Germany	32	8
Japan	33	7
Spain	33	7
China	33	6
Australia	31	7
Brazil	30	7
Netherlands	27	6
India	25	6

● C-Suite   ● VP and Director

Job title

Title	VP and Director	C-Suite
Director — IT/Digital		
Director — Business	122	
Global Business Services or Shared Services	78	
SVP/VP — IT/Digital	54	
Chief Information Officer		28
SVP/VP — Business	28	
Chief Finance Officer (CFO)		21
Chief Operations Officer		
Chief Digital Officer		11
Other C-level executive		
Chief Data Officer		8
CEO		

● C-Suite   ● VP and Director

Company size (Revenue)

Between US$3B and $5B
	VP and Director	C-Suite
	270	55

Between US$1B and $3B
	VP and Director	C-Suite
	127	18

Between US$5B & $10B
	VP and Director	C-Suite
	69	27

US$10B +
	VP and Director
	23

● C-Suite   ● VP and Director

Industry

Industry	VP and Director	C-Suite
Retail	81	
Automotive	69	11
Energy	64	16
Government	66	14
Utilities	72	8
Banking and Financial Services	41	18
Healthcare	39	6
Insurance	28	8
Life Science	29	6
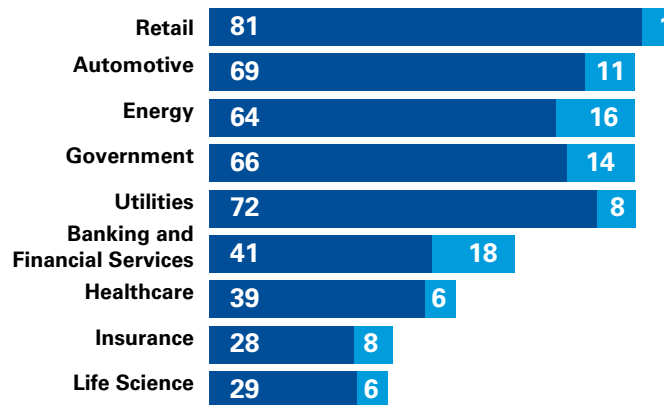
● C-Suite   ● VP and Director

Source: HFS Research in conjunction with KPMG International, State of intelligent automation, 2019
Sample = 590 business leaders including 100 C-level executives

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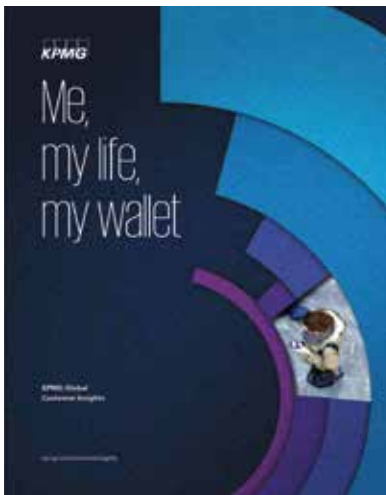
Further reading

How may A.I. assist you?

Ready, set, fail?

Harvey Nash/KPMG CIO survey 2018

Me, my life, my wallet

Growing pains

About KPMG's Center of Excellence for Data-driven technologies

Decision-makers trust professionals at KPMG member firm to help them turn their data into insights. That is because an extensive network of professionals combines data-driven technologies and capabilities with deep-rooted domain expertise to help organizations address their most important growth, risk and cost strategies.

KPMG's network of member firms is supported by KPMG's global Center of Excellence for Data-driven Technologies, where data scientists, software engineers and consultants work together to develop the solutions that will transform how organizations compete now and in the future.

Founded upon a legacy of more than 100 years of trusted data science, our member firm professionals are positioned to help decision-makers gain the confidence they need to win in an ever-changing environment.

Explore more at kpmg.com/stateofIA

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