



# Internal audit and intelligent automation

**To make your processes smarter,  
turn to your process guides**

Third article in a series

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# Who is missing from your intelligent automation program?

**Facing risks such as high altitude conditions, unpredictable weather, and treacherous geography, even the most elite climbers must rely on expert mountaineering guides to help them reach the summit. With their vast experience, mountaineering guides are the backbone of the expedition. They know where dangers lurk and how to avoid them, advise climbers on which routes to follow, and manage the logistics, helping get ropes, tents, oxygen, and other equipment in place.**

Mountaineering guides cannot move a climber's feet, but the climb isn't possible without them. Their guidance is crucial in reducing the risks on the journey and making the experience safe, rewarding, and successful.

When it comes to business processes, internal auditors can serve organizations similarly to mountaineering guides. Given their leading role in evaluating and improving the effectiveness of the organization's approach to risk management, governance, and controls, internal auditors have an unrivaled view of the inner workings of business processes across the enterprise. It is core to internal audit's mandate and clearly where internal audit can provide significant insight and value to the organization. As a result, progressive internal auditors know better than most where the weaknesses in business processes lie—the parts that are leading to inefficiency, ineffectiveness, or risk.

What's puzzling is why the internal audit function is often overlooked in business process transformation initiatives.

You are seeking to improve your business processes to compete in today's digital, disruptive, fast-paced business environment. And a team of process experts is just down the hall or a phone call away. Yet, they may be left out of conversations and decisions about major process changes.

## Internal audit as a process change guide

As businesses respond to disruption through process transformation, internal audit can leverage its unique skills and capabilities to help guide the way:

- Deep understanding of process risks and areas of potential inefficiency or process breakdown
- Knowledge of how the enterprise works, including explicit knowledge of opportunities to convert to automation
- Ability to build cross-functional relationships
- Strong communication skills
- Passion for collaborative, hands-on problem solving
- Alignment with organizational goals and values
- Ability to balance diligent planning with speed and agility in decision making

Businesses that involve internal audit in transformational process change—including leveraging of intelligent automation—will increase their chances of success. Getting it right the first time will avoid problems down the road and help eliminate the need for rework, reduce long-term costs, and operationalize their program more quickly—so they can start enjoying the benefits.

Read on to learn how internal audit can add value to a process transformation effort by leveraging their process expertise and knowledge of intelligent automation to:

- Identify opportunities for automation
- Reduce risks associated with automation
- Automate controls in automated processes.

#### **What's inside?**

Learn how and why internal audit can be a catalyst for business transformation that involves process change—with a focus on how internal audit can add value to one of today's significant change enablers: intelligent automation.

**Progressive internal audit functions can be a guide through the organization's process transformation initiative. In this paper, we'll show you why and how internal audit—with its enterprise-wide vantage point, institutional knowledge, and a core mandate to identify opportunities for improvement—can be a catalyst for business transformation that involves process change. We'll do this through honing in on one type of change enabler that is especially top of mind for executives: intelligent automation.**



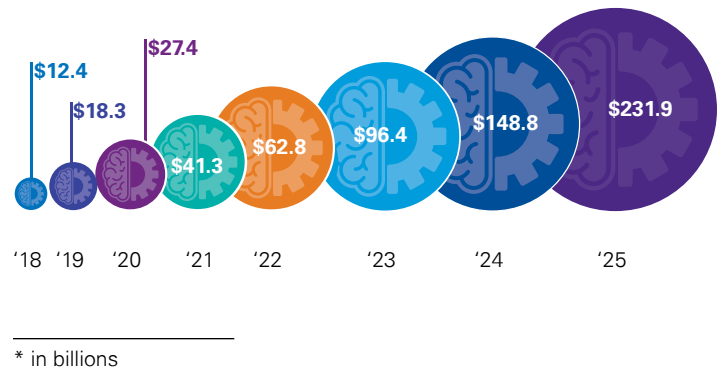
# Intelligent automation: What and why?

**Let's pause to look at the big picture. What's all the fuss about intelligent automation anyway? Seeking a competitive edge, organizations are always looking to improve their business processes—to make them faster, less costly, and more effective. As the world goes digital, many are seeking process transformation through intelligent automation.**



Intelligent automation—a spectrum of smart technologies spanning robotic process to cognitive automation (see graphic below)—is a powerful tool for business transformation, and maybe the most influential we've seen in a long time. With the ability to automate daily business activities and scale expertise, it promises huge gains in speed, accuracy, and cost effectiveness for a wide array of front-, middle-, and back-office processes across business units.

It is little wonder that intelligent automation is spreading like wildfire. Organizations are implementing intelligent automation at a rapid rate as the cost of the technology drops, its capabilities advance, and it becomes easier to integrate legacy processes and technology infrastructures. The adoption rate for intelligent automation by internal audit departments continues to ramp up at the functional level as well.

**KPMG estimates a 20X increase in the intelligent automation market over the next 7 years.**



**Intelligent automation technology ranges from task automation to knowledge augmentation.**

	Rules	Learn	Reason	
<b>Act like a human</b> 	<b>Basic process automation</b> <ul style="list-style-type: none"> <li>— Macro-based applets</li> <li>— Screen level and Optical Character Recognition (OCR) data collection</li> <li>— Workflow automation</li> <li>— Process mapping</li> <li>— Self-executing</li> </ul>	<b>Enhanced automation</b> <ul style="list-style-type: none"> <li>— Built-in knowledge repository</li> <li>— Learning capabilities</li> <li>— Ability to work with unstructured data</li> <li>— Pattern recognition</li> <li>— Reading source data manuals</li> <li>— Natural language processing</li> </ul>	<b>Cognitive automation</b> <ul style="list-style-type: none"> <li>— Artificial intelligence</li> <li>— Natural language recognition and processing</li> <li>— Self-learning (sometimes self-optimizing)</li> <li>— Processing of super data sets</li> <li>— Predictive analytics/hypothesis generation</li> <li>— Evidence-based learning</li> </ul>	<b>Think like a human</b> 

Source: KPMG LLP, 2018



## Intelligent automation will dramatically impact how work gets done.

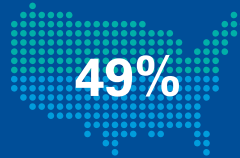
# 232BN

Intelligent automation spending will reach \$232 billion by 2025—almost a 20X increase from today.

Source: KPMG LLP, “KPMG survey on the impact of intelligent automation on business and operating models” (2018)



HELLO!



Nearly half of companies will use intelligent automation at scale within 3 years.

Source: KPMG LLP, “KPMG survey on the impact of intelligent automation on business and operating models” (2018)

# 600% AND 800% ROI

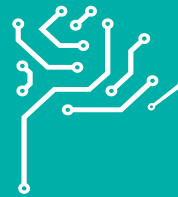
Recent research suggests a return on investment in robotic technologies between 600% and 800% for specific tasks.

Source: London School of Economics, “The IT function and Robotic process automation” (2015)

Strategically leveraging intelligent automation to create new business and operating models can yield **5X to 10X dividends.**

Source: KPMG LLP, “KPMG survey on the impact of intelligent automation on business and operating models” (2018)

# 30 percent



30% of processes in IT, customer engagement and finance/accounting will be impacted significantly by intelligent automation.

Source: KPMG LLP, “KPMG survey on the impact of intelligent automation on business and operating models” (2018)

# Top 5

By 2020, smart machines will be a top five investment priority for more than 30% of CIOs.

Source: Gartner, “Gartner worldwide IT spending forecast” (2018)



50–60% of white collar work is automatable, and this will have a 30% labor cost reduction.

Source: Morgan Stanley, “Rise of the machines: Automating the future” (October 2017)

“If you can teach a machine to do boring work, you can free people up to prioritize issues, fix deficiencies, connect with customers, and think and innovate—which is what people want to do.”

— Cliff Justice, Principal, U.S. Leader, Intelligent Automation, KPMG

“Quite simply, you can’t be an effective digital organization if you don’t have your manual processes digitized and automated. That’s what robotic process automation does.”

— HfS (Money flows to robotic process automation, ZDNET, July 18, 2017)

# A natural fit

## Intelligent automation and internal audit seem like a natural fit, right?

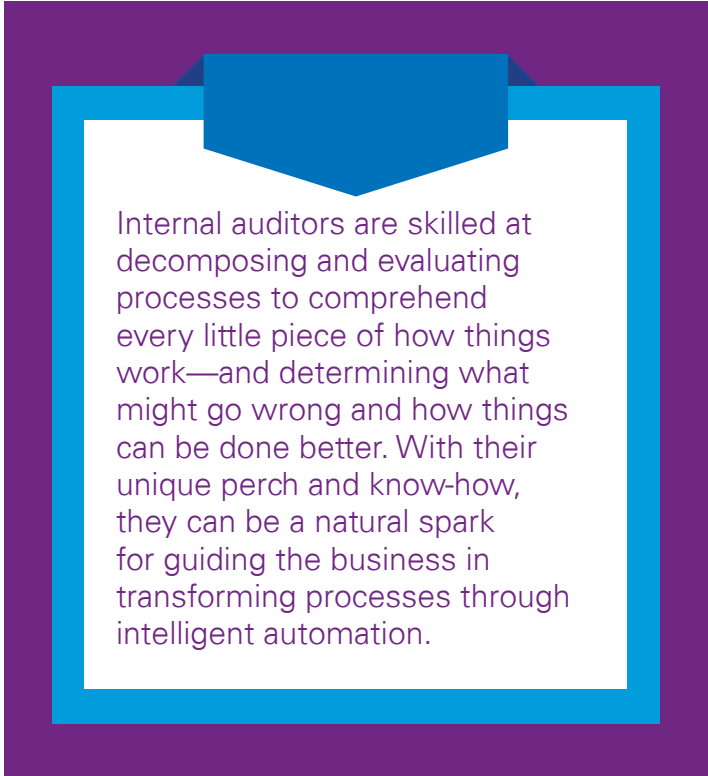
**Understanding risk and business process performance is a core skill set and responsibility of the internal audit function. Internal auditors are skilled at decomposing and evaluating processes to comprehend every piece of how things work—and determining what might go wrong and how things can be done better. With their unique perch and know-how, they can be a natural spark for guiding the business in transforming processes through intelligent automation.**

### So what's the problem?

Internal audit does not routinely play a central role in business transformational efforts. There are a number of reasons why.

For one, internal audit may not be articulating its value completely. According to research by KPMG and Forbes, there is a big gap in the value internal audit functions provide versus what companies find valuable. For example, 36 percent of CFOs and audit committee chairs say their companies wish to receive informed perspectives on emerging risks from the internal audit function; however, only 5 percent actually receive them. In addition, only 10 percent of companies agree that their internal audit function adequately identifies and responds to emerging risks.<sup>1</sup>

Another reason is the organization may believe internal audit will slow down the transformation process. Simply, the organization may not consider risk explicitly in its transformation initiatives. As a result, leadership may not think to engage internal audit in transformation initiatives until things go wrong, at which point they may be engaged to provide individual point solutions at the back-end of the process.



Internal auditors are skilled at decomposing and evaluating processes to comprehend every little piece of how things work—and determining what might go wrong and how things can be done better. With their unique perch and know-how, they can be a natural spark for guiding the business in transforming processes through intelligent automation.

<sup>1</sup> Seeking value through internal audit (KPMG International and Forbes Research, 2016)



Finally, management may have concerns regarding internal audit's ability to maintain its independence if involved in the transformation process. Internal audit can play a role in assisting the organization in identifying emerging risks and opportunities for enhancement while remaining objective.

Not including internal audit in planning and executing business transformation is a missed opportunity. This late-stage approach prevents the organization from tapping into a valuable source of knowledge of risks, process workflows, and improvement insights.

“As organizations transform their business processes through intelligent automation, internal audit can play a strategic role in helping the organization achieve business outcomes by helping manage emerging risks and identify opportunities for enhancement.”

— Duleep Rodrigo, Principal,  
Risk Consulting, KPMG

# Identifying intelligent automation opportunities

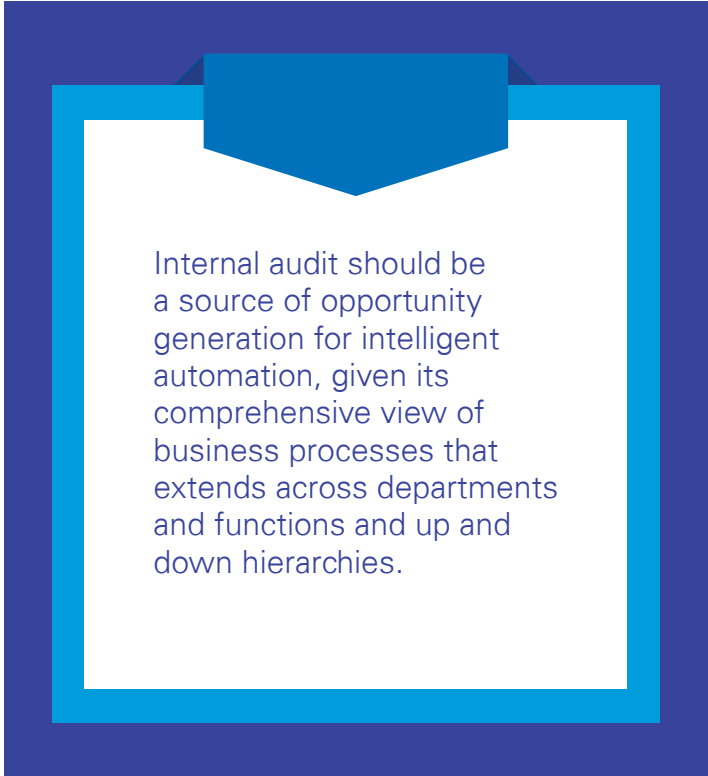
## **Internal audit should be a source of opportunity generation for intelligent automation, given its comprehensive view of business processes that extends across departments and functions and up and down hierarchies.**

Prior to implementing intelligent automation in a business process, you need to first understand the flow of information within that process. Internal audit can provide a robust process and control understanding, leveraging discussions with the audit team in advance of discussion with the business and reviewing key audit artifacts (narratives, flowcharts, detailed process decompositions, and other control and process documentation) that are typically compiled from routine internal audit activities. These can be a great start as processes are further decomposed down to the click level. This could be an entire end-to-end process or just a small part of a process. For example, a manually intensive process for handling a core and routine function across multiple locations would be a prime candidate for automation.

Secondly, internal audit will have a strong grasp—based on insights and experience from prior internal audits—on where roadblocks, gaps, or inefficiencies may be hampering current business processes. It also has insights as to which processes are the best candidates for enhancement through technology enablement, including automation. When a process is automated, it can help reduce variability that leads to negative outcomes.

The final element aligns with a core mandate of internal audit. Consider a business process as a route to climbing up a difficult mountain. Internal audit knows where there are risks on the route that require specific planning to navigate. The knowledge of these process-level risks will be a key lens when automation opportunities are vetted. Additionally, internal audit's command of enterprise and process risk offers an excellent leverage point for helping to ensure automation opportunities improve risk management.

With its deep understanding of information flow and processes, internal audit should be closely involved in advising on which manual processes can transform and improve, becoming more efficient and effective through intelligent automation.



Internal audit should be a source of opportunity generation for intelligent automation, given its comprehensive view of business processes that extends across departments and functions and up and down hierarchies.

# Bringing it to life

Sometimes, internal audit may develop automated solutions for the purpose of their audit, which the business may adopt. For example, while performing an internal audit for an energy company, the audit team identified an opportunity to use data and automation techniques to more efficiently perform an analysis that was being done manually. The company had numerous, large infrastructure projects that require construction personnel to have specific certifications, and the project management team was responsible for validating the contractor qualifications, a time-consuming task. Internal audit used an analytics tool to automate the comparison of dates on project tasks to employee certifications, and generate an interactive report that allows users to quickly identify exceptions, reducing the intensive manual effort and risk of errors. The construction project management team was so impressed by how the automated process enhanced the identification and prevention of employee qualification issues that it licensed the tool, fundamentally changing its process to improve efficiency and reduce risk.

“ Internal audit used an analytics tool to automate the process of determining if employees were qualified to perform specific construction tasks at the time the work was performed. We were able to review 100 percent of the tasks in a short period of time, and the client has now adopted the analytics we performed. They are looking to shift this analysis to proactively prevent unqualified work performance through fully automated processes instead of detecting them after the work is performed. ”

— Jeff Taraba, Manager, Internal Audit & Enterprise Risk, KPMG



# Reducing intelligent automation risks

**A backward-looking approach to technology risk doesn't work anymore. The pace of new disruptive technology is so fast that you won't have the luxury of time to go back and build controls into automation later, at least not without costly and burdensome rework that will drain the value you expected.**

This means the business owners need to be thinking about risk exposure from process changes involving intelligent automation, right from the beginning. Without a complete picture of your automation program life cycle, you won't be able to understand how you can get involved and contribute to effectively address the risks of automation—and your new “smart” processes won't be so smart after all.

Business processes will be directly impacted when automation risks aren't properly managed and business owners are not engaged with risk functions in managing those risks. For example, lack of program and risk oversight, bot ownership and monitoring, and consistency in implementing changes to bots can all negatively impact process performance and/or cause processes to fall out of compliance.

Fortunately, internal audit has the knowledge and skills to help address automation risks throughout the automation program life cycle. Internal audit understands where things might go wrong and can build in risk considerations from the beginning. This gives business leaders a line of sight into what's happening in the middle of the process—not just at either end—so that the newly automated processes can withstand the scrutiny of an audit.

Internal audit also knows that just as intelligent automation can change how an organization does business, it also creates new challenges for the control environment,

such as how to supervise computer programs that can learn from experience and modify themselves. By implementing intelligent automation, companies are undertaking a controls transformation project too. When you automate a process, you need to construct controls on the front end. Without built-in controls, internal auditors may have no viable alternative but to test the efficacy of the control through reperformance, an approach that will add inefficiencies.

**Internal audit can help the organization understand, evaluate, and assess the new governance, risk, and control considerations associated with an intelligent automation program with consulting or assurance services in every stage of the automation program life cycle: plan, build, run, and monitor. Learn more with [the second article in our series](#).**



## What risks should you consider in your organization's intelligent automation program?

Without a complete picture of your automation program life cycle, you won't be able to understand how you can get involved and contribute to effectively address the risks of automation—and your new "smart" processes won't be so smart after all.

This problem is exacerbated when elements of the automated process are outsourced or involve managed services. If controls are not considered in the original contracts, diagnosing issues happening in third-party environments will be time-consuming and difficult—and fixing them may be virtually impossible.

Involving internal audit helps ensure the controls transformation is as planned and intentional as the intelligent automation program, saving you time and money, and improving overall effectiveness.

Finally, internal audit's role in intelligent automation programs is also about prioritizing the areas that really have to *go right* within an automated process. Internal audit can be a knowledgeable adviser to the organization in this area. In what areas should the business *accept* some risk? For example, most businesses would likely be hesitant to accept much risk in customer-centric activities, such as marketing a new product or communicating with a sales prospect, but may accept more risk in back-office processes such as approving employee leave and delivering basic IT support.





# Automating controls in automated processes

**Wouldn't it be a shame to automate a process to improve efficiency and effectiveness, but still have to perform costly manual controls? Internal audit is ideally suited to help you identify which manual control activities within your newly automated processes can and should be automated, demonstrating ROI to the business through cost savings as well as increased process reliability.**

Internal controls help to ensure the efficacy and reliability of your core operational, reporting, and compliance processes, so your business can avoid obstacles and run smoothly. But controls can be expensive.

Today, the controls in place to reduce errors or fraud in business processes are often manual and labor-intensive. In fact, the cost of performing controls—given their magnitude and the number of people involved—can be staggering. Control performance currently makes up more than half of the total cost of controls in the majority of organizations<sup>2</sup> and increased regulatory focus of late continues to escalate the effort involved in control performance, which will likely increase operating costs even more.

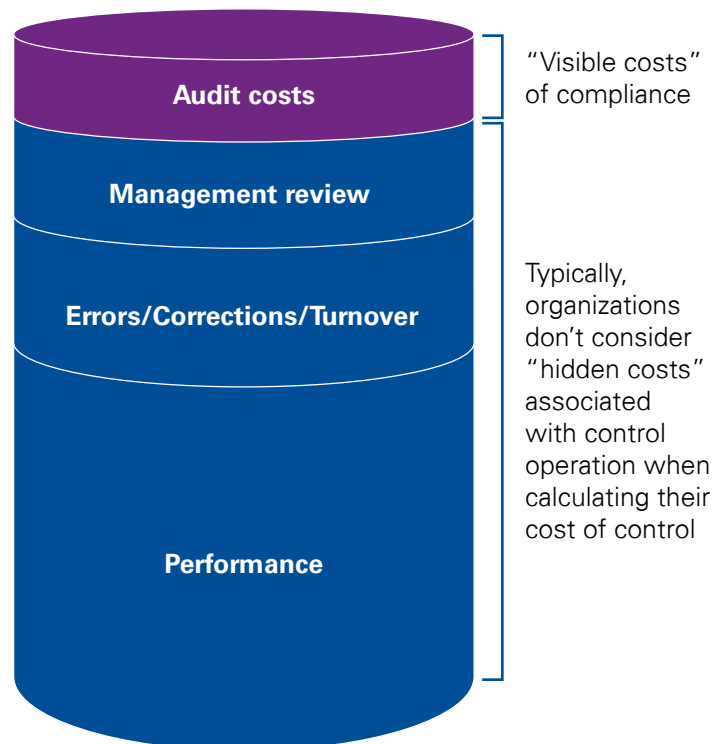
Here's the good news: Automating control activities can significantly reduce your control performance costs, improving your organization's bottom-line results. In addition, automated control activities are typically less time consuming to test than manual controls.

**“Internal audit can help the organization bake assurance objectives into the design of automated processes and controls, a win for all parties in creating greater efficiency and reliability.”**

— Mike Smith, U.S. Intelligent Automation Leader for Internal Audit, KPMG

Internal audit can guide you in automating the monitoring and testing of the controls themselves within the business processes where you apply intelligent automation. It also understands the necessity to efficiently audit such controls (e.g., audit trails, logging, change management, etc.).

## Cost of control components



<sup>2</sup> Based on results of KPMG control portfolio analysis engagements and KPMG's SOX HealthCheck services and experience

“The ability to leverage automation and analytics to efficiently review entire datasets, rather than a sample of 25 transactions, simply yields better results. Our project team’s ability to effectively identify and communicate issues, trends, and anomalies over multiple sets of related data for a given business process is delivering far greater results to our client stakeholders.”

— Brett Pennington,  
Managing Director, Risk  
Consulting, KPMG

To learn more about costs associated internal controls over financial reporting, read KPMG’s recent white paper: **“Internal controls over financial reporting: Uncovering the full picture of control costs.”**

## Examples of automated solutions for controls



### Automation of business process controls

Manual	Automated	Other controls
<ul style="list-style-type: none"> <li>— Reconciliations</li> <li>— Accounts receivable aging</li> <li>— Cash transfers</li> <li>— Journal entry analysis</li> <li>— Fee calcs</li> <li>— Loan review</li> <li>— Nightly settlement</li> <li>— Contract compliance</li> </ul>	<ul style="list-style-type: none"> <li>— Edit checks</li> <li>— Validations</li> <li>— Calculations</li> <li>— Interfaces</li> <li>— Reports</li> </ul>	<ul style="list-style-type: none"> <li>— Compliance</li> <li>— Cyber security</li> <li>— Payments</li> <li>— Regulatory compliance</li> <li>— Payments reconciliations</li> <li>— Positive pay validation</li> </ul>



### Automation of IT controls

Change management	Logical access	Computer operations
<ul style="list-style-type: none"> <li>— Changes are authorized</li> <li>— Changes are tested</li> <li>— Changes are approved</li> <li>— Developer access to production</li> </ul>	<ul style="list-style-type: none"> <li>— Passwords</li> <li>— New users</li> <li>— Periodic review</li> <li>— Terminations</li> <li>— Segregation of duties</li> </ul>	<ul style="list-style-type: none"> <li>— Incident management</li> <li>— Backups</li> <li>— Job scheduling</li> <li>— Physical security</li> </ul>



# Turn to your process guides

**Internal audit is the guide you want as your business takes on a transformation project, especially those leveraging intelligent automation. Deeply skilled at decomposing and evaluating processes to comprehend each activity—how things can go wrong and how things can be better—internal audit is a natural lever for applying intelligent automation to processes to drive efficiency, use resources more effectively and reduce risk along the way.**

**Some companies leave internal audit out of intelligent automation programs because they don't want to slow things down or don't think they play a valuable role. But in truth, internal audit does just the opposite. Internal audit has the right point of view on the internal workings of end-to-end business processes to identify areas that are ripe for automation, recognize risk concerns on the front-end of transformation, and deliver maximum value from automation initiatives.**

**Read the first two papers in our [four-part series on intelligent automation and internal audit](#).**

— **Part 1: Assessing and leveraging intelligent automation**

Discover opportunities for internal audit to assist in intelligent automation initiatives benefiting all three lines of defense.

— **Part 2: Governance, risk management and controls add value**

Learn how internal audit can support an enterprise's intelligent automation journey with consulting or assurance services in every stage.

**And stay tuned for the final installation!**

— **Part 4: Capitalizing on disruptive technologies**

Learn how internal audit can leverage emerging innovations to transform the internal audit process and be more valuable.

# How KPMG can help

**KPMG's Internal Audit & Enterprise Risk professionals are focused on helping you effectively leverage intelligent automation solutions to deliver greater value from business processes.**

**With services spanning from strategy to delivery to operations, we help ensure your intelligent automation program targets the highest impact business areas and properly integrates governance, risk management and controls.**

**Our work helps you transform your business processes while mitigating risk and enabling compliance with both internal and external requirements. We also help implement leading practices related to data security and privacy, change management, and processing integrity, auditability, and more.**



**KPMG is an award-winning pioneer in intelligent automation.**

2016 Data+ Editor's Choice Awards,  
*Computerworld* magazine

"Winner's Circle" status in HfS Blueprint Report on Digital Technology strategy and Consulting Services

Leader in Gartner's Magic Quadrant for Business Analytics Services, Worldwide

KPMG is a pioneer in providing Intelligent Automation solutions for our clients, for over three years now and serving over 200 clients via both on-premise implementations and as a managed service.



**We provide a measured approach to intelligent automation adoption.**

We have developed wide ranging and tested viewpoints focusing on using intelligent automation in the highest impact business areas. We use a scoring and evaluation methodology that compares typical legacy-state, labor-intensive, and error-prone manual processes with future-state automated processes enabled by intelligent automation solutions.



**We work across all parts of the organization.**

Our RPA use cases include horizontal functions (finance, HR, call center, procurement, etc.) and industry-centric verticals.

We do more than just configure bots.

Our service offering is broad and addresses strategy, process improvement, security, complexity, and people and change.



**We are a leader in natural language processing.**

KPMG is a leader in applying natural language processing in business context, merging into digital labor solutions that bring paper and unstructured data into mainstream computing, demonstrated through successful industry solutions.

**Visit our Web site** (<https://advisory.kpmg.us/services/risk-assurance/internal-audit-enterprise-risk.html>) to learn more about how our Internal Audit and Enterprise Risk services help increase confidence that your risk processes are integrated into your business as you enable intelligent automation solutions.





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