Intelligent automation and internal audit

Considerations for assessing and leveraging intelligent automation

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Internal audit's opportunity with the rise of intelligent automation

Intelligent automation, also known as digital labor, was once an intriguing but far-fetched idea, but it has now become almost a given in many organizations.

Today, virtually all business sectors are investing in advanced technologies such as big data, predictive analytics, process robotics, cognitive systems, natural language processing, machine learning, and artificial intelligence to automate knowledge work.

Automation isn't new, but a number of factors are converging to drive rapid adoption of intelligent automation. First, the cost of the technology is becoming more affordable, even as it becomes more powerful and advanced. Second, organizations now have the ability to more efficiently integrate intelligent automation applications within existing processes and technology infrastructures, increasing the speed of deployment for these types of solutions.

The new forms of disruptive technologies under the intelligent automation umbrella come in all shapes and sizes, but together they offer an incredibly efficient platform from which to automate tasks and scale expertise—largely independent of labor growth. Intelligent automation is taking hold in front-, middle-, and back-office processes in a wide array of business units, with most organizations in the exploration and pilot phases and leaders moving to scaled implementation.

Today's intelligent automation innovations have the transformational potential to increase the speed, operational efficiency, cost-effectiveness, control, and accuracy of daily business activities, and to empower skilled human professionals to generate more impactful insights, enabling smarter decisions more quickly.

The intelligent automation marketplace is maturing rapidly

Technology—from robotic process automation to cognitive automation—is advancing at a staggering pace and is disrupting almost every business and industry.

Cognitive technologies

60%

Investment in cognitive technologies will be an area of focus for **almost 60% of CEOs through 2020**

81%

CEOs are emphasizing **trust**, **values**, and **strong culture** to sustain the organization's future

Connecting with customers

45%

45% of CEOs say they are not effectively leveraging digital to connect with their customers

The concern for integration

61% of CEOs are concerned about integrating cognitive processes and artificial intelligence in the workplace

Active disruption to gain insight

72%

of CEOs said their organizations are actively disrupting their own sectors

Source: 2017 CEO Outlook Survey, KPMG LLP (June 2017)

Staying competitive means embracing digital

60% of CEOs worry their organizations' sensory capabilities and innovative processes will not stand up to rapid disruption
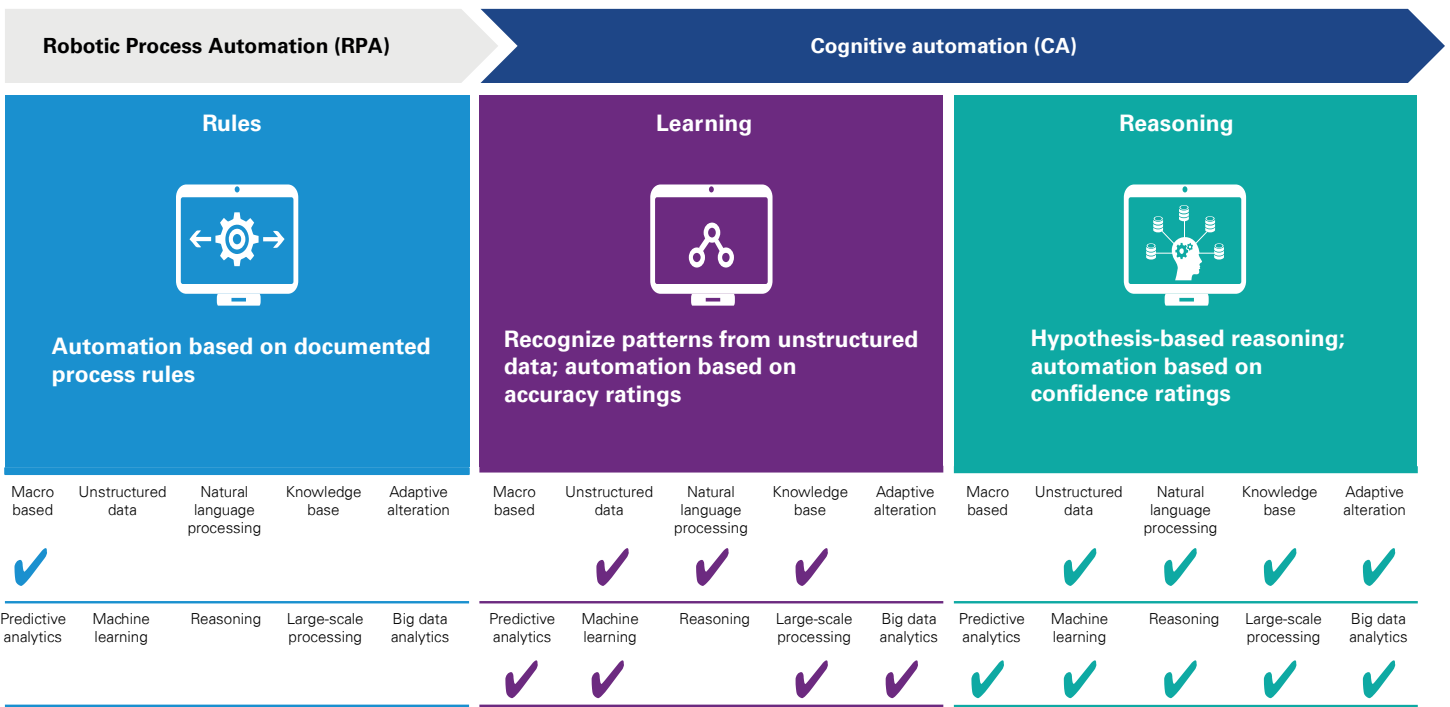
Understanding intelligent automation

For internal audit leaders to help the organization through the risk considerations associated with intelligent automation, they first need a firm grasp of exactly what intelligent automation is and how it is being used to improve the organization's business processes.

Intelligent automation leverages data and analytics, robotic, cognitive, and artificial intelligence to automate both routine business process activities as well as complex knowledge work.

Intelligent automation has the capacity to augment human capabilities to an incalculable degree, enabling both entire enterprises and individual functions to transform how business gets done.

Robotic Process Automation (RPA)	Cognitive automation (CA)	
Rules	**Learning**	**Reasoning**
Automation based on documented process rules	**Recognize patterns from unstructured data; automation based on accuracy ratings**	**Hypothesis-based reasoning; automation based on confidence ratings**

Rules

Macro based	Unstructured data	Natural language processing	Knowledge base	Adaptive alteration
✔				

Predictive analytics	Machine learning	Reasoning	Large-scale processing	Big data analytics

Learning

Macro based	Unstructured data	Natural language processing	Knowledge base	Adaptive alteration
	✔	✔	✔	

Predictive analytics	Machine learning	Reasoning	Large-scale processing	Big data analytics
✔	✔		✔	✔

Reasoning

Macro based	Unstructured data	Natural language processing	Knowledge base	Adaptive alteration
✔	✔	✔	✔	✔

Predictive analytics	Machine learning	Reasoning	Large-scale processing	Big data analytics
✔	✔	✔	✔	✔

The expanding landscape of intelligent automation technologies is large and multifaceted, but it can be broken down into three primary classes that lie on a spectrum from simplest to most complex.

Basic robotic process automation (RPA) lies at one end of the spectrum. Consisting of software- and app-based tools like rules engines, workflow, and screen scraping, RPA tools automate manual and routine activities that follow clear-cut rules, such as comparing records and processing transactions.

Enhanced process automation lies in the middle of the spectrum. These technologies have the ability to process unstructured data, build and use repositories of knowledge, and learn from experience. These capabilities allow them to automate more complex processes that are less structured, more specialized, and require some human judgment, such as fulfilling purchase orders and onboarding new employees.

Cognitive automation (CA) lies on the far end of the spectrum, targeting activities that require higher-level skill, judgment, and critical thinking. CA systems combine advanced technologies such as natural language processing, artificial intelligence, machine learning, and data analytics to mimic human activities such as inferring, reading emotional cues, reasoning, hypothesizing, and communicating with humans. The value goes beyond the ability to automate processes—CA can also augment what human employees do, making employees more informed and more productive. A "robo-advisor" that provides financial investment guidance and a "virtual assistant" in a call center that responds to a customer inquiry are real-world examples of CA that exist today.

What is internal audit's role in intelligent automation?

In a business environment that's changing at a faster rate than ever before, internal auditors play an increasingly important role. With the vast uncertainties presented by an onslaught of disruptive forces, the internal audit function must keep pace to help the organization understand and manage the associated risks, achieve expected results from automation, and continue to innovate to add value. Key opportunities for internal audit within intelligent automation initiatives include the following:

— Internal audit can help to integrate **governance, risk, and controls** considerations throughout the automation program life cycle as an organization establishes and implements its program.

— Internal audit can help the organization identify opportunities to **embed automation-enabled control activities within the impacted business processes and functions**.

— Finally, the internal audit organization can capitalize on intelligent automation innovations to **increase the efficiency and effectiveness of its own activities**.

This paper is **the first of a four-part series on intelligent automation and internal audit** written for executives, board members, and internal audit leaders charged with overseeing and strengthening an organization's overall risk posture. It highlights opportunities for internal audit to assist in intelligent automation initiatives benefiting all three lines of defense. Future papers in this series will expand on the opportunities in further detail.
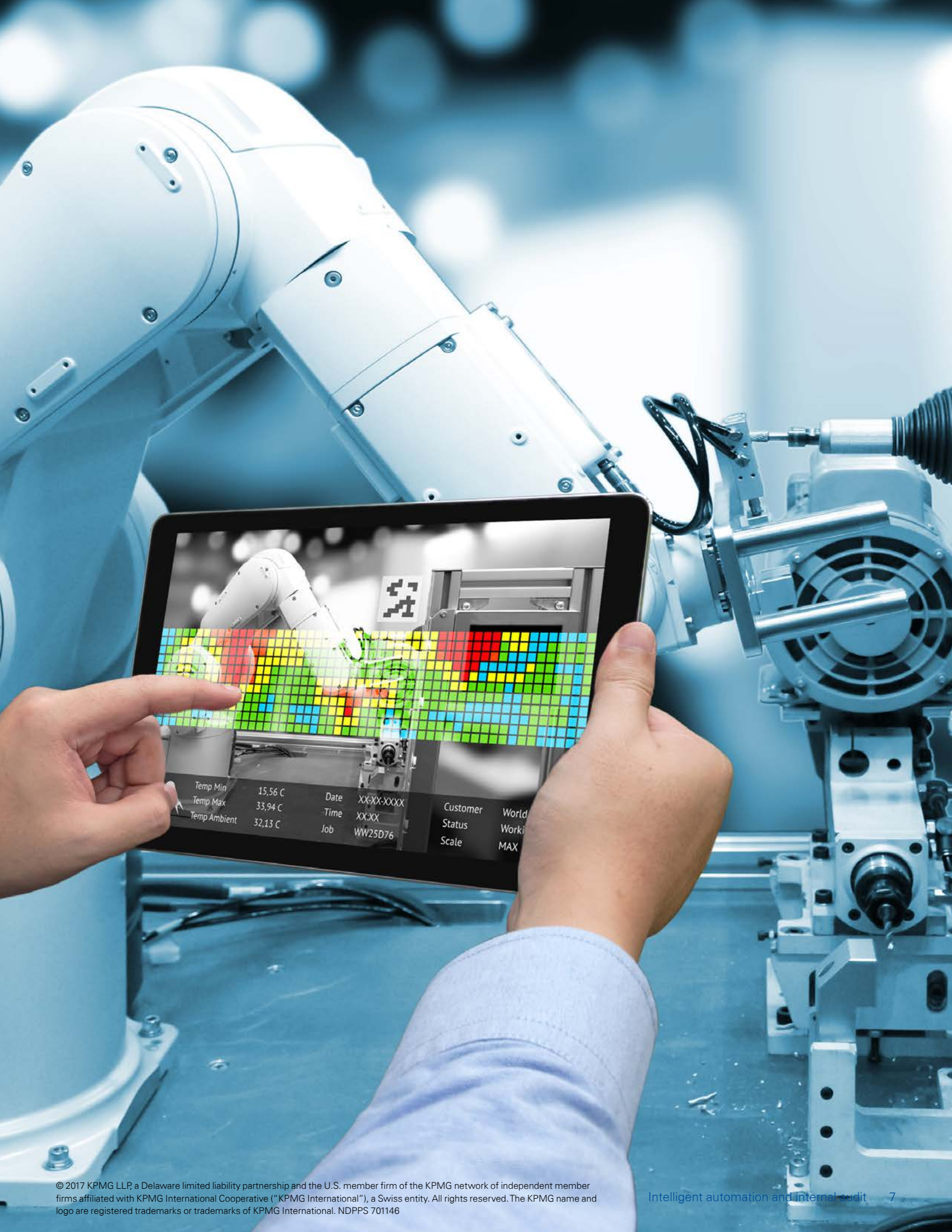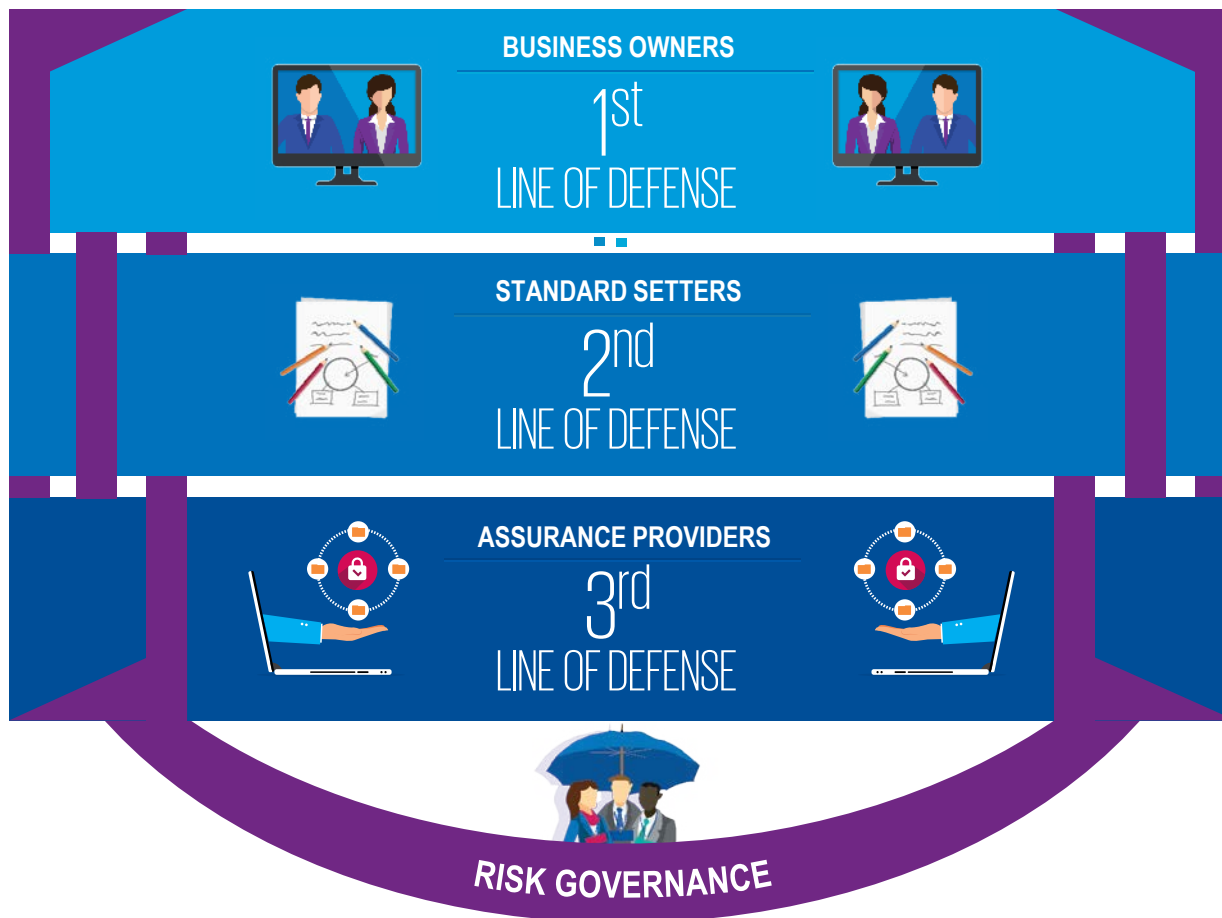
Internal audit considerations for intelligent automation across the three lines of defense

Now, let's explore the specific opportunities for internal audit to assist the organization with intelligent automation initiatives by looking at the considerations for each line of defense.

BUSINESS OWNERS

1st
LINE OF DEFENSE

STANDARD SETTERS

2nd
LINE OF DEFENSE

ASSURANCE PROVIDERS

3rd
LINE OF DEFENSE

RISK GOVERNANCE

First line of defense – Business owners

As the organization embarks on intelligent automation initiatives within its business processes and functions, internal audit should act as a key "automation advisor," with a primary focus on assessing the impact of automation initiatives on systems and controls to address the organization's changing risk profile.

In addition, internal audit should help identify opportunities to embed automation-enabled control activities into intelligent automation initiatives. Consider, for example, how internal audit can assist the finance and accounting function in using intelligent automation to more effectively comply with financial reporting standards (e.g., SOX, SOC 1, SOC 2, ISO, HIPAA, etc.) while still achieving risk and control requirements.

When these tasks shift from manual to automated, it will allow the organization to:

— Improve consistency and quality in the application of policies, procedures and controls

— Improve efficiency of manual activities, resulting in cost savings from reduced errors and cycle time

— Improve morale and reduce costs by managing labor capacity constraints

— Reduce the total cost of compliance

— Enable faster decisions.

> *Driving savings with intelligent automation*
>
> *Companies that implement intelligent automation typically see cost takeout from 40 percent to 75 percent, with payback periods of several months to several years. Exactly how much and how fast depends on how well leaders understand and capitalize on the common savings drivers for intelligent automation projects, including executive support, planning and strategy, automation governance, risk and security constraints, automation integration, and an enterprise-wide approach.*
>
> *Read KPMG's white paper, "Capitalizing on robotics," to learn more.*

Second line of defense – Standard setters

For the second line of defense, internal audit should help identify opportunities to leverage intelligent automation within monitoring controls, regulatory compliance, regulatory policies, and reporting activities.

Internal audit should also help the second line of defense to establish appropriate procedures and standards to address the governance, risk, and control considerations associated with an intelligent automation program. Although leveraging existing system implementation governance is a good foundation, the unique opportunities and risks related to intelligent automation will drive evolution in governance.

Finally, internal audit should help identify the risks associated with intelligent automation initiatives to help the organization implement appropriate standards for risk mitigation. Key risk areas for consideration include:

— Authentication of bots

— Change management

— Program and bot monitoring

— Overall risk and governance.

Third line of defense – Assurance Providers

Seizing automation opportunities can also help internal audit reduce its costs, improve outcome quality, and drive additional value within the internal audit organization. While intelligent automation opportunities within internal audit activities may be limited by either the maturity of the organization's processes, systems, and controls or the quality and availability of data, numerous potential use cases exist. In evaluating where internal audit can benefit from shifting to an intelligent automation model, internal audit should consider all phases of the internal audit process: risk assessment, planning, scoping, testing, reporting, remediation assessment and monitoring, and audit management and administration.

By utilizing intelligent automation, the internal audit team has the ability to "do more with the same," including:

— Improve quality and consistency of internal audit processes

— Improve efficiency of planning, testing, and reporting activities, creating more time for critical thinking activities

— Increase coverage and frequency of testing across the audit universe

— Expand the audit scope for individual audits

— Move from limited sample testing to full population testing

— Manage labor capacity and geolocation constraints.

KPMG's cognitive-powered audit

KPMG is raising the bar on audit quality and the audit experience through our investment in people, proprietary tools, and innovative technologies. Our approach is to deliver a quality audit that is risk-based, industry-specific, and tailored to each organization's particular operational structure and size. KPMG's Audit practice has an exclusive agreement with IBM Watson to apply cognitive computing technology to the development and testing of audit processes, which will enhance audit quality. To learn more about how KPMG applies CA to the audit, read KPMG's white paper, "Harnessing the power of cognitive technology to transform the audit." These same concepts are being applied within KPMG's Internal Audit and Sarbanes-Oxley Advisory Services (IASOAS) service network and are also applicable to internal audit functions.

Source: "Harnessing the power of cognitive technology to transform the audit" (KPMG, 2017)

Key takeaways

With the ability to significantly augment human capabilities, intelligent automation enables enterprises to drive greater value and transform how they do business across all three lines of defense. But it should also be considered as an area of emerging risk.

As such, internal audit has a critical role to play in enterprise-wide intelligent automation programs. It can—and should—have a seat at the table in developing the organization's intelligent automation strategy and implementation plan across all three lines of defense.

Stay tuned for upcoming papers in this four-part series on intelligent automation and internal audit.

— **Part two:** Uncover the governance, risk management, and control considerations internal audit and the organization should address associated with intelligent automation adoption.

— **Part three:** Learn how internal audit can help identify opportunities to embed automation-enabled control activities into business processes and functions on the intelligent automation journey.

— **Part four:** Explore how internal audit can increase its own value by capitalizing on intelligent automation within the scope of daily internal audit activities.

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