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Providing senior management, boards of directors, and audit committees with concise information on governance-related topics.

Artificial Intelligence: The Future for Internal Auditing

"I predict the Internet will soon go spectacularly supernova and in 1996 catastrophically collapse."
Robert Metcalfe, founder of 3Com, 1995

Every technical breakthrough has its naysayers, and artificial intelligence (AI) is no exception. But history indicates that industries and professions that fail to embrace new technologies tend to fade, while those that adopt and adapt thrive.

Still undecided whether AI is a game-changer? Ask John-Robert Curtin, founding member of the 4Civility Institute: "Over time, artificial intelligence has the potential to change everything related to mankind."
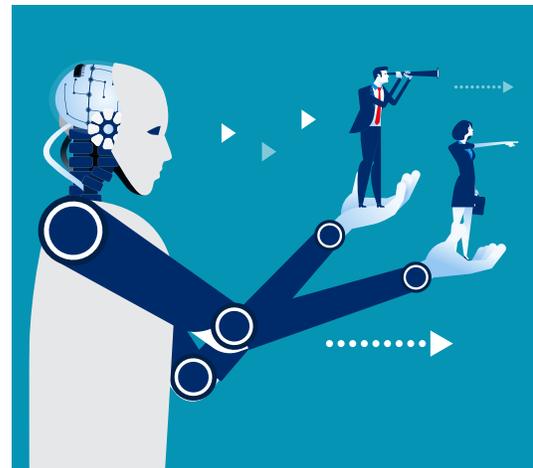
Getting a Grip on AI

The first hurdle in dealing effectively with AI is understanding what it is. The consensus is that AI is hardware and software that are capable of behaving like the human brain: learning, reasoning, adapting, analyzing, making decisions, and performing complex and judgment-driven tasks. Couple this capability with the massive amounts of data created today, and it is easy to see how AI-powered machines can enhance productivity and make life easier by taking over mundane tasks.

It is important also to understand what AI is not. According to Michael Koenig, instructor at Seattle University, AI is not about being correct and complete. It is about finding probabilities. "An AI system cannot perform the task of finding all the contracts with errors," he explains, "but it can answer the question, 'What is the probability that this contract has an error?'"

Bottom line, AI is a self-perpetuating and -improving technology. The more it does, the smarter it gets — and now the machines are teaching other machines, learning on the job.

Impact on Internal Auditing

Like any algorithm- and data-driven process, AI presents internal audit with a clear role in ensuring accuracy and reliability. AI can function properly only when it is analyzing good data and evaluating against valid criteria, areas where internal audit can provide a positive effect. Important for boards and other stakeholders to understand, internal audit can focus on the following stages in the AI life cycle:

■ **As AI is built.** AI systems are created by humans, who can be biased, judgmental, and unfair. Look to internal audit to conduct tests that determine that results produced by AI reflect the original objective and have not been skewed by the biases of the technology's creators — and can also propose ways to mitigate bias, inequity, and other potential harms in automated decision-making systems. Internal auditors also should be expected to contribute to responsible design by ensuring that AI systems comply with laws and international conventions that recognize and preserve human dignity, rights, and freedoms.

■ **As AI performs.** Most boards and executive management know that performance is familiar turf for internal auditors. Data quality drives the quality of AI's outcomes, yet data is often generated by multiple sources that do not communicate or resolve data issues. Internal auditors can test for reliability, accuracy, repeatability, and completeness. They can also engage in performance measurement — ensuring that performance is measured against valid criteria that reflect achievement of organizational objectives.

But perhaps internal auditors' most significant role in AI performance is identifying, assessing, and communicating to management and the board AI's significant risks and efforts to address those risks. Some potential risks include human logic errors will be embedded in AI technology; customers/stakeholders will not accept or adopt the organization's AI activities; and benefits of AI will not justify its cost.

■ **As AI is managed and controlled.** Like any emerging technology, AI will require a reexamination of lines of accountability and oversight, and revision or development of governing policies and procedures. Look to internal audit to provide assurance in these areas.

Data privacy and security, including cybersecurity, will also require internal audit's attention. The more powerful a technology becomes, the more damage it can do if it is taken over by malicious actors. Internal auditors should be expected to take a proactive role in providing assurance over readiness and response to cyberthreats, treating the safety of users and third parties as a paramount concern.

In addition to focusing on AI as it would any risk, internal audit should be supported in using AI in its audits. AI can allow internal auditors to review data sets faster, look for patterns, and uncover new relationships between data points that are currently overlooked — relationships that may suggest avenues for further exploration. "A typical query has an end result and an auditor is done," said Sarah Bee, director of the IAEP Center of Excellence, Seattle University. "With AI and data analytics, the answer to a query is a springboard to another question."

Board Support

Boards have a responsibility to support management and staff in their efforts to achieve optimal performance in pursuit of organizational objectives. In those organizations whose strategies depend on the use of AI, the board should support the CAE's efforts to ensure that the internal audit team is prepared to provide assurance over AI and capitalize on its efficiencies in appropriate audit plans and activities. This can begin with cataloging the risks and conflicts that may arise as AI takes a greater role in the business, fleshed out by meetings of the internal audit team and key business unit leaders to discuss these issues and brainstorm responses.

More specifically, the board should support the CAE in activities such as:

- Ensuring that the internal auditors understand the strategic objectives of the organization, and the AI processes established to achieve those objectives. That understanding will enable them to evaluate whether the organization's AI initiatives are doing what they were created to do and are helping the organization achieve its objectives.

- Evaluating how AI can supplement the internal auditors' efforts by performing the more administrative aspects of internal auditing.

What Boards Need to Ask

To perform their duties effectively, boards need to ensure that questions about the AI/internal audit intersection are being asked and answered by the appropriate bodies — questions such as:

- Has an audit plan been established for AI?

- Are AI applications being audited differently from general IT applications? Internal auditors may need to speak to different people to audit AI applications — data scientists, for example, as opposed to the IT department.

- Has the risk of AI applications been fully assessed?

- Is internal audit evaluating whether the AI applications are helping the organization achieve objectives?

- Does this organization understand the paradigm shift AI represents, of looking for a correct answer versus the *probability* of a correct answer? Has a probability threshold the organization can tolerate been determined?

- Ascertaining whether internal auditors have the skills and training to recognize AI-related risks, assess them, and provide assurance over management's risk management activities.

- Determining whether training is in place to help internal auditors sharpen critical thinking skills that will come to the forefront once AI is handling administrative tasks.

- Assessing the criteria for hiring, to ensure that new hires can filter the larger stores of data that will be available through AI and determine what data relationships are significant to the organization.
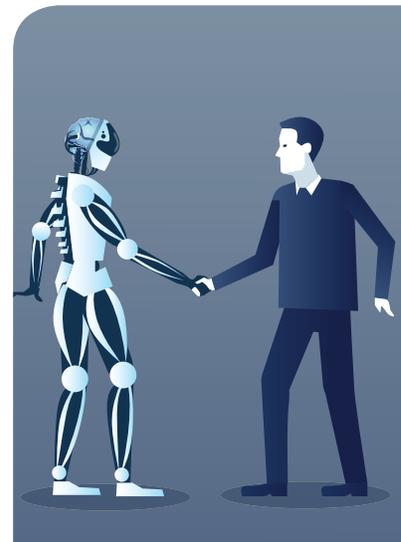
What the Future Holds

Some technology analysts believe anything that can be reduced to data will ultimately be taken over by machines. That leaves creativity and judgment, which are the exclusive territory of humans and are often what differentiates one company from another.

Curtin believes that the current question for internal audit — "How do they account for the inclusion of AI in their organizations?" — will be replaced with questions about trying to deal with a runaway train. "Since the train is already on the track, the option of stopping it is out of the question," he notes. "The question needs to be 'how do they control the train and how do they adjust and adapt to the changes that are coming to their organizations and to humanity?'"

Koenig points out that AI is a tool, just like spreadsheets and pivot tables, and useful only when humans understand how to use it to improve business processes. "AI cannot replace internal auditors. An auditor will apply his or her creativity and broad domain knowledge to evaluate risks. An AI system can only find results based on large data sets and the algorithms it knows how to run."

Quick Poll Question

To what extent does your internal audit function incorporate AI in its activities?

❏ Not at all
❏ Minimally
❏ Moderately
❏ Extensively
❏ Fully

Visit **www.theiia.org/tone** to answer the question and learn how others are responding.

Quick Poll Results:

How involved is internal audit in assuring accurate and complete information flows to the board?

Not At All Involved	Slightly Involved	Moderately Involved	Very Involved	Extremely Involved
20%	33%	21%	19%	7%
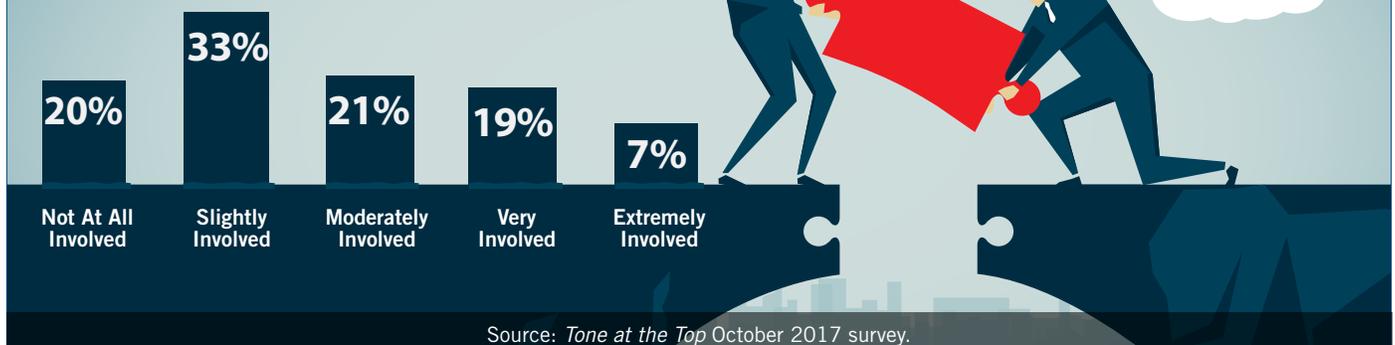
Source: *Tone at the Top* October 2017 survey.

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