KPMG

Intelligent Automation

How cognitive technology can sustain audit quality in the digital age

The foundation of the capital markets is relevant and trustworthy financial data, and the audit profession is instrumental in providing assurance over the financial data used to make financial decisions each and every day.

As the audit profession encounters a digital world where information is ubiquitous and volumes of data are exploding, auditors are increasingly deploying digital tools, including intelligent automation and cognitive technology, to make sense of this digital data and fulfill our important responsibilities to the investing public.

Digitizing the Audit: Why are audit firms doing this?

Audit Quality – Deliver sustained high-quality audits in a world of ubiquitous information and exploding data

Empower and Enable audit professionals for success in a digital and mobile world

Insights – provide (i) richer, more detailed audit evidence; (ii) enhanced transparency, consistency and depth of audit procedures; and (iii) deeper views into a company, its risks, its controls and its operating environment

Confidence – identify anomalies and focus audit professionals on risk to provide high confidence outcomes

[1]Unstructured data refers to information that doesn't reside in a traditional row-column database, such as emails, free text documents, videos, photos, audio files, presentations and web pages.

As coined by Klaus Schwab, Founder and Executive Chairman of the World Economic Forum, we are at the beginning of the "Fourth Industrial Revolution," evidenced by "ubiquitous, mobile supercomputing. Intelligent robots. Self-driving cars. Neuro-technological brain enhancements. Genetic editing. The evidence of dramatic change is all around us and it's happening at exponential speed."

The 21st century enterprise is encountering a world where more data is created in a day than was created in a lifetime just a generation ago. As such, the tools we use to evaluate this data to perform quality audit services and also derive meaningful insights that impact our audit needs to adapt to this environment. That is where digital solutions, including cognitive technology and intelligent automation, are critical to success.

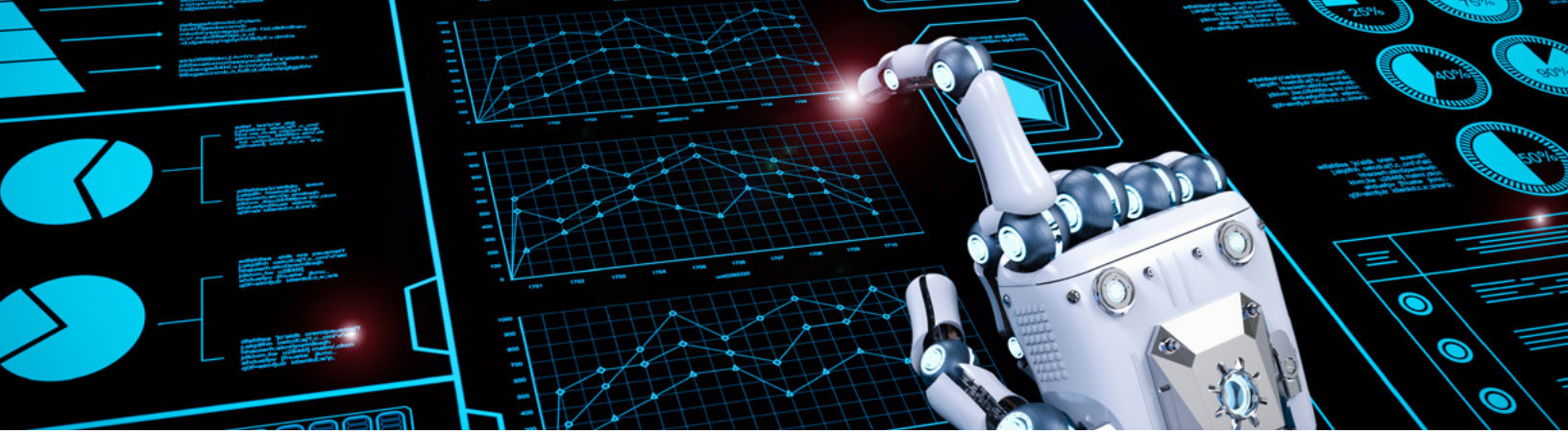
Whether its workflow automation, which allows our professionals and clients to work more seamlessly with data, or robotic process automation, which allows us to use our intellectual property to assess great volumes of data for risks and anomalies, or intelligent automation, which uses cognitive technology to read unstructured data[1], identify relevant attributes and perform predictive analytics, the audit profession must continue to invest in digital tools to serve the capital markets, enable our professionals and promote the public trust.

of CEO's consider their Company to be a technology company

Source: Fortune CEO Daily – 6/18/17

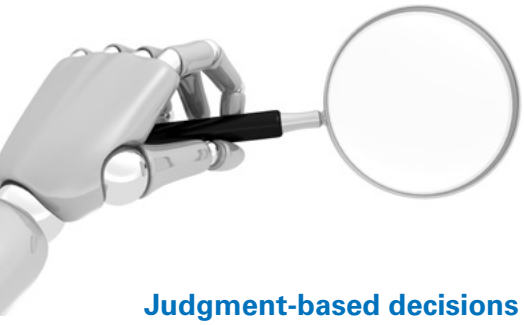
of CEO's are concerned about integrating cognitive processes and artificial intelligence into their business operations and 57% say their organizations do not have the sensory capabilities and innovative processes to respond to rapid disruption

Source: KPMG US CEO outlook survey, June, 2017



What is cognitive technology?

Cognitive systems assist human knowledge workers in two fundamental ways:

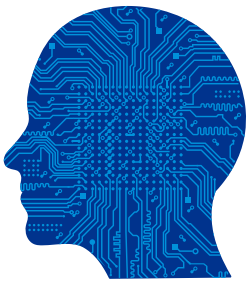


Evidence gathering

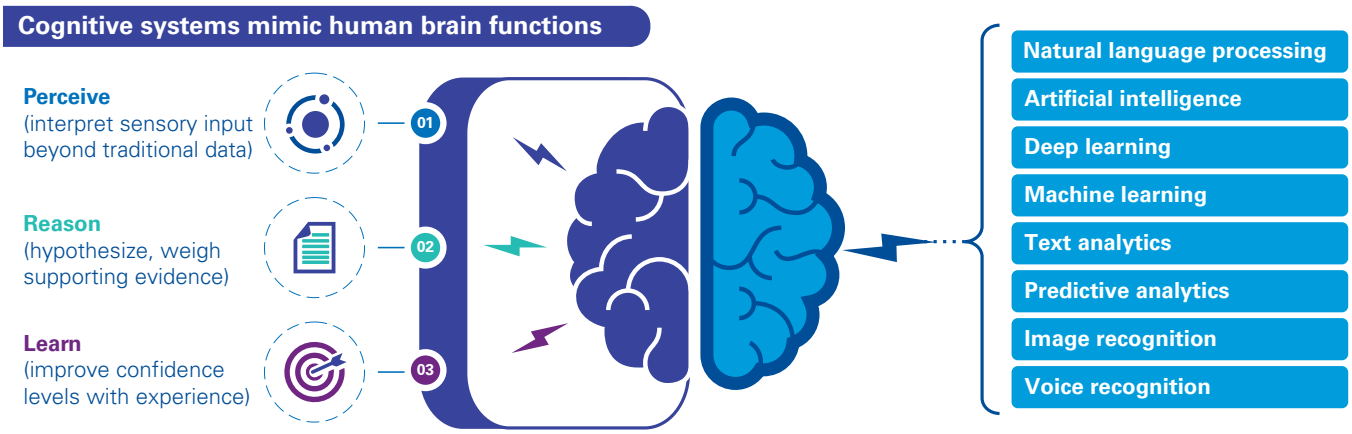
Cognitive systems are adept at finding information within the unstructured, semi-structured, and mixed formats of documents that underlie many audit processes. By combining known methods for information extraction and retrieval, natural language processing, and optical character recognition (OCR) software with innovations in applying these methods to financial documents, cognitive systems assist knowledge workers in obtaining evidence and generating hypotheses that support decision-making.

Judgment-based decisions

Once the appropriate evidence is gathered, cognitive technologies aid and monitor the human judgment that auditors apply in their interpretations, recommendations, diagnoses, and conclusions. These systems specify methods and technologies that convert knowledge into machine-interpretable logics and convert data into human-interpretable insights. The systems consist of an ensemble of techniques across state-of-the-art artificial intelligence, from statistical approaches to large-scale reasoners. They not only aid knowledge workers in their current workflow, but have the capacity to monitor user behavior to eventually learn to perform more of these complex tasks.



The analytical capabilities of cognitive technology are well-suited to the increasingly data-driven processes prevalent in today's audit environment.



In the near future, unprecedented advances in computing technology will enhance our audit by making it possible to generate deeper analytical insights on a range of financial and operational areas.

Predictive analytics

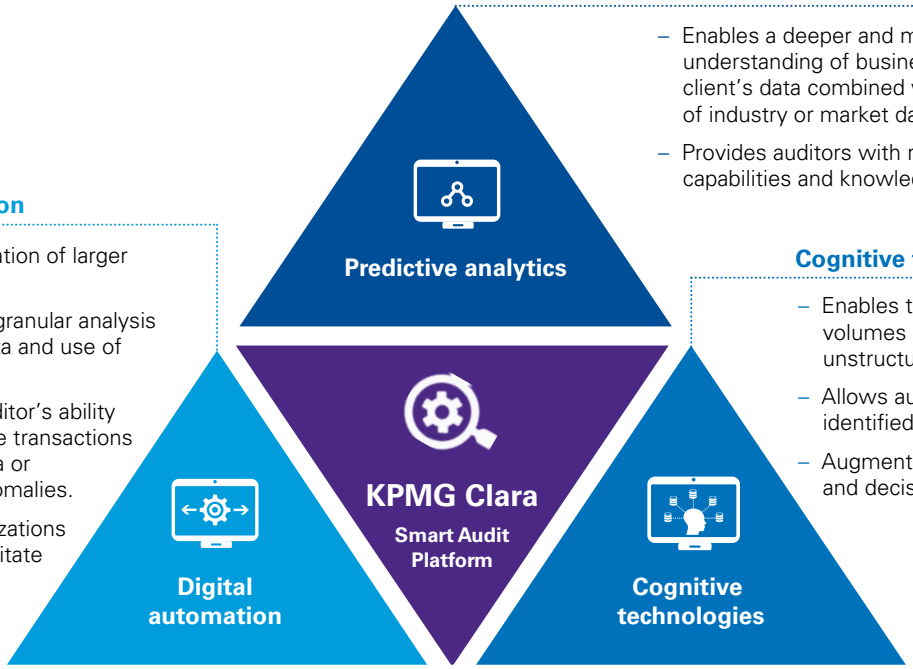
- Enables a deeper and more robust understanding of business risks by using client's data combined with an analysis of industry or market data.
- Provides auditors with refined analytical capabilities and knowledge.

Digital automation

- Allows for evaluation of larger data sets.
- Enables a more granular analysis of underlying data and use of algorithms/rules.
- Supports the auditor's ability to identify unique transactions and pinpoint data or performance anomalies.
- Enhances visualizations of results to facilitate interpretation.

Cognitive technologies

- Enables the analysis of larger volumes of data, in particular unstructured data.
- Allows auditors to dig deeper into identified exceptions.
- Augments professional judgment and decision making.



People will continue to make the difference

KPMG LLP is committed to fostering a culture of innovation and we know it's our talented professionals who are essential to our success. To be successful in today's digital environment, our professionals are bringing stronger critical thinking, analytical, data science and IT skills, to complement their financial and business acumen. And, all of these skills, are being empowered and enabled through digital tools and resources that assist in delivering sustained high-quality audits and allow our people to be successful.

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