Why artificial intelligence is a game changer for risk management

The idea of computers outsmarting and replacing humans has existed in movies and books for decades. Fortunately, that hasn't happened on a wide scale yet. But what has happened is the recent emergence of artificial intelligence concepts—specifically cognitive computing. These concepts involve advanced technology platforms that can address complex situations that are characterized by ambiguity and uncertainty. Cognitive computing has begun to augment business decisions and power performance right alongside human thought process and traditional analytics. In fact, the domain of risk management lends itself particularly well to cognitive computing capabilities, as typical risk issues often include unlikely and/or ambiguous events.

Companies and public sector organizations have progressed in terms of using massive amounts of internal and external data to take a more preventative risk stance, says **Samir Hans**, a Deloitte Advisory principal in the Forensics & Investigations practice of Deloitte Transactions and Business Analytics LLP. However, traditional methods of analysis have become increasingly incapable of handling this data volume. Instead, cognitive capabilities—including data mining, machine learning, and natural language processing—are supplanting traditional analytics and being applied against these massive data sets to help find indicators of known and unknown risks. ❯

"Given the increases in computational processing power and corresponding decreases in the costs of data storage, artificial intelligence in the business world is fast becoming a reality. These artificial intelligence or cognitive-based technologies help computers interact, reason, and learn like human beings."

Samir Hans
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Data that doesn't fit in a spreadsheet

Artificial intelligence is increasingly becoming a routine part of our daily lives with the introduction of digital personal assistants, music and movie recommendation services, and cars that can see around corners. Just as smartphones, online shopping sites, and music apps learn and adapt based on our preferences, cognitive computing can be used to teach computers to recognize and identify risk.

Of course, computers have always been able to perform mechanical calculations faster than humans. The difference is that with cognitive analytics, computers have the ability to learn as well. "That was missing before," Hans says. "Computers haven't always been great at what humans would call gray areas of thought and reasoning, but they are getting better."

The use of artificial intelligence to manage risk is particularly helpful when handling and evaluating unstructured data—the kind of information that doesn't fit neatly into structured rows and columns. Cognitive technologies, such as natural language processing (NLP), use advanced algorithms to analyze text in order to derive insights and sentiment from unstructured data. Given that a 2015 International Data Group study estimates that roughly 90 percent of data generated today is unstructured, implementing cognitive analytics can place businesses right on the cutting edge, Hans notes. Leaders who leverage cognitive technologies to anticipate and proactively manage risk can gain competitive advantage and use risk to power their organizations' performance.

"Many organizations have done a pretty good job of analyzing and interrogating structured data," Hans says, "but if you dump some contracts and medical literature and relevant law material together, that's unstructured, and the ability to analyze that data is the upside of cognitive."

Computers get smarter

Look at fraud detection as an example. The old method of detecting fraud was to use computers to analyze a lot of structured data against rule sets. For example, fraud specialists would create a threshold for wire transfers at $10,000 so any transaction over that amount would be flagged by the computer for additional investigation. The problem is that this type of structured-data analysis often creates too many false positives, Hans says, which require hours of close scrutiny.

"With cognitive analytics, fraud detection models can become more robust and accurate," Hans explains. "If a cognitive system kicks out something that it determines as potential fraud and a human determines it's not fraud because of X, Y, and Z, the computer learns from those human insights, and next time it won't send a similar detection your way. The computer is getting smarter and smarter. That's a huge game changer." ⏩

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As these cognitive fraud detection systems continue to learn, they will be able to detect more complex fraud, an advantage that may have the biggest impact on risk management. "Cognitive technologies can help unearth emerging patterns that humans could never detect," Hans says. "Then those emerging patterns become a new pattern to look for. The bottom line is: In fraud detection, cognitive is expected to make it more accurate and offer stronger protection."

Where to apply cognitive analytics

These new capabilities are not limited to detecting risk. Cognitive analytics allow businesses to quickly tap unstructured information, personalize services, and reduce subjectivity in decision making. Among the arenas where this approach to data is useful are healthcare, retail, and even litigation, where computers are "trained" to discover specific information in millions of legal documents and perform any necessary global language translation.

Analysts project that overall market revenue for cognitive solutions will exceed $60 billion by 2025, compared to the $1 billion in venture capital funding for cognitive technologies in 2014 and 2015, according to the International Data Corporation.

At this stage, Hans advises that cognitive technology is still an assistive technology to help suggest strategies and probabilities of outcomes, and that human expertise is still important.

"Together, humans and computers will be able to do things that were just not possible previously," he says. "Over the past five years, Deloitte Advisory has invested a lot of time, capital, and talent on analytics. We didn't just jump on this as a fad. It's a natural transition based on what we've seen over the past five years. These advances can help our clients make better decisions, and it's only just the beginning."

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