Technology

By Asif Ahmed

The insurance industry has begun to leverage artificial intelligence to cut costs and improve efficiency. But technology will never completely supplant human reasoning.

Replacing Humans With Machines

The recent motion picture "A.I." seems to have revived the term "artificial intelligence" in popular culture. The robots of "A.I." explore moviegoers' fascination with the possibility of a future world in which highly intelligent machines serve humans.

Depictions such as these created powerful impressions about artificial intelligence in the general public's mind. Ideas presented in this type of film also created high expectations in the minds of insurance managers about the power and potential of artificial intelligence applications.

But the perception that artificial intelligence would replace human functions left the industry disillusioned when the miracle application failed to materialize. We were disappointed when day-to-day business remained dependent upon human intervention. Misconceptions resulted in expectations that proved to be unrealistic.

But now, technology is catching up to its promise; artificial intelligence is steadily taking hold in insurance applications, and industry perception about its value is changing. Artificial intelligence is effecting tremendous improvement in areas such as fraud detection, where losses are climbing into the billions of dollars. With cost containment becoming increasingly critical for business survival, the benefits of artificial intelligence applications are sorely needed.

To derive the greatest value from artificial intelligence software and functionality, we first need to understand what it is and what it is not. We need to identify appropriate uses for artificial intelligence in insurance processes, and discard our unrealistic notions of replacing humans altogether.

According the *Dictionary of Computing and Digital Media*, artificial intelligence is "software that makes decisions based on accumulated experience and information," and uses functions "such as learning, adapting, reasoning and self-correcting." An example of true artificial intelligence is the neural network, which simulates a human brain by use of a multilayer perception network, rather than a rules-based system. It responds to new situations by analyzing previous responses, applying them to new situations, evaluating feedback on the selected response and learning a new, more successful response. The unique characteristic of a neural network is that its knowledge base is cumulative. Therefore, it becomes more proficient with experience—much as humans do.

The most commonly used form of artificial intelligence is the rules-based system, which applies a set of programmed rules to a data set. When presented with a problem, it searches a database for statements/logic to produce a decision. Rules-based systems cannot establish new rules on their own. Engineers must define the rules as business issues to be better understood.

The insurance industry has begun to leverage artificial intelligence in a variety of areas:

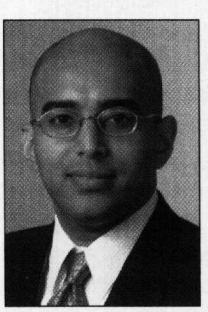
- **Fraud detection.** During claims processing, neural networks and rules-based systems can flag relationships among claimants, doctors, lawyers and other events associated with fraud. After learning the characteristics of fraudulent claims, the network can then quickly spot potential fraud in new claims. A similar approach is used in the credit industry to identify credit-card fraud.
- **Identifying optimal cases for settlement.** Rules-based systems can offer a second opinion on claims that are best settled. It can compare periods of hospitalization, disability rates, verdicts from different jurisdictions and standard demographic information.

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- **Litigation management.** Rules-based artificial intelligence can identify improper billings, overbilling and duplicate bills, and it can compare cost patterns.
- **Comparing claim characteristics.** Fuzzy logic, which recognizes more than simple true and false values, and neural networks can create profiles for catastrophic events and compare them with claims in an insurer's database. During a search, artificial intelligence processes can ask how closely a claim compares to the established profile.
- **Identifying claims for subrogation.** Insurers are using artificial intelligence's predictive technology to search databases for claims that have high subrogation potential.

The true value of artificial intelligence lies in its ability to improve the quality of decisions and in making humans better at what they do. Even with speed and error-free efficiency, artificial intelligence can't use common sense, intuition or put a decision into context. Being a knowledge-based industry, insurance will always rely on the expertise of its human talent.

Artificial intelligence will deliver on its promises only if insurers take the time to understand where and how it may best be used. Artificial intelligence technology will augment our collective human intelligence, but it certainly can never replace it. BR



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