RIMS
the risk management society

Professional Report

Making Sense of Artificial Intelligence and Its Impact on Risk Management

Making Sense of Artificial Intelligence and Its Impact on Risk Management

Author

Tom Easthope
Microsoft

Contributors

Michael Perrone, PhD
IBM

Brandon Righi
RIMS

Editors

Morgan O'Rourke
RIMS

Brandon Righi
RIMS

Art Director

Nick Nguyen
RIMS

RIMS®
the risk management society

As the preeminent organization dedicated to educating, engaging and advocating for the global risk community, RIMS, *the* risk management society®, is a not-for-profit organization representing more than 3,500 corporate, industrial, service, nonprofit, charitable and government entities throughout the world. RIMS has a membership of approximately 10,000 risk practitioners who are located in more than 60 countries. For more information about the Society's world-leading risk management content, networking, professional development and certification opportunities, visit www.RIMS.org.

For risk professionals, it can be difficult to make sense of the many and varied perspectives around artificial intelligence. While the theoretical discussions about long-term impacts on society are important to understand and track, the more pressing issue is to understand the impacts on your industry, your organization and, ultimately, your career. Although the technology is rapidly evolving and does require focused study and analysis, this process for a risk professional is not new and is certainly feasible.

First let's understand a few foundational concepts:

Artificial General Intelligence (AGI): This form of artificial intelligence refers to "thinking machines" that apply intelligence to a wide range of cognitive functions and continue to improve their reasoning abilities automatically. Generally speaking, AGI is the kind of artificial intelligence that often receives the most hype. For many of us, the best examples are the well-known machines from science fiction classics, such as HAL in *2001: A Space Odyssey*, R2D2 and C3PO in *Star Wars*, or SkyNet in *The Terminator*. While AGI presents tremendous opportunities, as well as risks, the likelihood of it becoming a reality in the next 20 years is quite low. Therefore, although it is an interesting thought exercise, it has low practical risk for the foreseeable future.

Gartner estimates that AI-derived business value will be worth $3.9 *trillion* by 2022.

Artificial Narrow Intelligence (ANI): This is the game-changer for businesses. As the name suggests, this application of artificial intelligence is focused on narrower tasks, such as image recognition, credit card fraud detection and speech recognition. ANI should be a major concern for risk professionals as it has impacted many aspects of everyday life, and will continue to have growing, and potentially unexpected, impacts. The market for narrow solutions is much bigger: Gartner estimates that AI-derived business value will be worth $3.9 *trillion* by 2022.[1] And as companies increasingly adopt these technologies to take advantages of the benefits of ANI, the risk of unintended consequences will grow. Risk professionals need to keep an eye on these risks and opportunities in their planning for the future.

Algorithms: These are the mechanisms (supervised, unsupervised and reinforcement learning) that machines use to learn. Algorithms are important to understand as they represent a control mechanism to guard against introduction of various forms of bias in the implementation of AI.

Data: Any implementation of artificial intelligence is dependent on data. Both volume and the variety of data points are highly correlated with successful artificial intelligence innovation. In order to understand patterns and accurately reflect the complexity of our diverse world, data is vital. Those that have it will innovate faster with more success.

AI and Your Organization

Many risk professionals are tempted to emphasize controls, or lack thereof, as their risk management focus. This controls-focused approach will not fully capture the complexity of new AI technology. In the context of enterprise risk, the key to integrating AI is understanding your organizational strategies in terms of both the opportunity and peril that AI innovation can bring. If the charter of an enterprise risk group is to enable and sustain value creation, then the risk of not adopting some form of AI is greater than the theoretical peril of implementation.

As organizations initially pursue ANI, some common implementation scenarios will include:

- *Advanced process implementation* aided by geometric expansion of data produced by supply chain eco-systems where chain of custody and logistical agility are becoming more valued in an increasingly volatile world.

  Examples of ANI use in the supply chain are abundant. From Rolls-Royce teaming up with Google to create autonomous ships, to UPS relying on AI to plan the most efficient routes, to "smart warehouses" being better able to predict when goods will arrive and orders depart, technology is transforming every link of the supply chain (and disrupting many sources of employment in the process).[2]

The key to integrating AI is understanding your organizational strategies in terms of both the opportunity and peril that AI innovation can bring.

- *Extending existing analytical capabilities* by using machine-aided analysis to enhance human-centric processes and inform the user of patterns identified by computer that the user might have missed.

  Examples include analyzing medical scans to catch problems that human doctors have missed, or using deep learning algorithms to monitor electrical power grids to better understand vulnerabilities and demand issues. IKEA is also using AI to help designers and customers "test drive" furniture by virtually placing potential purchases in a home.[3]

- *Cognitive engagement* characterized by intelligent agents, personal assistants or chatbots that can apply patterns of behavior that gain "wisdom" through extended and expanded access to a person's digital profile.

  This area is where we have seen the biggest gains in AI in our personal lives. Nearly all of us have interacted with Microsoft's Cortana or Amazon's Alexa, or "chatted" with a bot on a website or over the phone. Cognitive engagement is also having an impact in the health care world. There are many examples, including the Babylon AI doctor app, which uses speech recognition to consult with patients, check their symptoms against a database, and offer adequate treatments.[4]

In these and other use cases, there are a number of exposures to consider:

- Today's ANI innovation is tomorrow's

[1] https://www.gartner.com/en/newsroom/press-releases/2018-04-25-gartner-says-global-artificial-intelligence-business-value-to-reach-1-point-2-trillion-in-2018
[2] https://www.forbes.com/sites/blakemorgan/2018/09/17/5-examples-of-how-ai-can-be-used-across-the-supply-chain/#258d9fb8342e
[3] https://www.cnbc.com/2018/01/26/ikea-sees-massive-opportunities-with-artificial-intelligence-and-virtual-reality.html
[4] https://callminer.com/blog/16-examples-of-artificial-intelligence-across-6-industries/

standard product feature that consumers take for granted. Artificial intelligence is not a discrete thing; it exists in a continuum of product/service evolution. Often, narrow AI innovations lose their "AI" label once integrated into existing offerings and can be overlooked (think Cortana, Siri or Alexa, for example).

- Changes introduced by AI innovations can present new, discrete risks to the organization or become a driver or amplifier of existing enterprise risks. Evaluate whether controls need to be created to enable new business models or strategies or extend across a broader scope.
- Product and service differentiation is not necessarily driven by a computational algorithm. Rather, it is data-driven. Risk professionals should consider impacts to data related to risk domains such as security, privacy and resiliency.
- Distribution systems that rely on third-party developers, partner/agent sales models or other customer contact points can extend your risk beyond the traditional corporate boundaries. AI developed, operated or otherwise influenced by third parties working on your behalf needs to be consistent with your organization's core values.

Organizational culture should play a role in the adoption of AI. When considering where to invest, organizations need to determine if an innovation will support the organizational mission and strategy and create value for stakeholders. Culture will also be a factor in how AI is applied. For instance, is the organization committed to transparency or accountability for any bias in AI implementation? These are important areas to consider but are not unique to the introduction of artificial intelligence. Ethical decision-making capability and the influence of company culture are key components of any successful business.

AI and Your Career

Changes introduced by AI innovation will impact most jobs. Many tasks in the risk, compliance and insurance industries are likely to be automated. In the insurance industry alone, AI may impact the following areas:

- Distribution: faster, more personalized engagements, usage-based contracts, automated agents
- Underwriting/pricing: more data and evolving analytics to make decisions, increased regulation
- Claims: increased efficiency from process automation and insights to drive further mitigation

There is an opportunity to examine the organization's strategies and aspirations through a risk lens in order to provide a unique perspective on AI implementation.

But while change is inevitable, it does not mean that your risk career must end. Instead, there is an opportunity to examine the organization's strategies and aspirations through a risk lens in order to provide a unique perspective on AI implementation. Essentially, if you understand the organization's strategy and how it can enhance its operations with ANI or the context around data, then you have something to offer. Here is list of suggestions to enhance your career in light of the changes AI will bring:

- Understand how AI impacts processes and systems end-to-end. Risk professionals have a unique enterprise-wide vantage point to identify, understand the cross-company impacts and make connections that others cannot see.
- Help existing audit and compliance functions understand how to enhance or augment their assurance functions. Considering the scale and impact of AI, the likelihood of new or extended regulation could be increasing. Understanding how to shepherd your organization through a regulatory framework, especially if it is a new requirement, can be a unique contribution.
- Understand the lessons learned from other data-related risks (e.g., security, privacy, etc.) to address new sensitivities to AI innovations. Also, do not ignore the role of incident response. It is safe to say that even the best-intended projects sometimes miss the mark. Being prepared with response principles is a valuable contribution that can help preserve an organization's reputation.
- Become more data savvy. Organizations need people who understand the context around data to train AI tools. This may be an opportunity to bring your risk experience to a growing field where you can build new subject-matter expertise.

Key Takeaways

- Understanding the debate about the impacts of AGI is good but your organization is more likely to intersect AI in a narrow application. Understand the role that the volume and quality of data will play in your implementation. Be clear about responsibilities and obligations of data stewardship.
- Introduction of AI is enabling the successful achievement of corporate objectives. Consider AI as a driver or amplifier of existing risks already on your radar.
- Change is inevitable. Your career will change, and you need to participate in that evolution. Opportunities exist for those who can apply the principles of continuous learning.

Conclusion

To harness the AI revolution to the benefit of your risk management career, start with the basics: Understand your organization's business objectives. With that business acumen, you can start to uncover where existing and forthcoming ANI technology will best fit in your organization. A handy shortcut is to focus on key user scenarios: In other words, how does AI intersect with customers, employees and regulators?

From there, the steps are straightforward. Review the key controls around data including the need for transparency of decision making. You will also want to have response principles in place and ready for those times when something goes wrong. And finally, find ways to participate in strategic discussions around AI and educate yourself on the world of possibilities offered by AI innovations.