lavery
Lawyers

Artificial intelligence and its legal challenges

May 1, 2017

Author

Jean-Sébastien Desroches

Partner, Lawyer

Is there a greater challenge than to write a legal article on an emerging technology that does not exist yet in its absolute form?

Artificial intelligence, through a broad spectrum of branches and applications, will impact corporate and business integrity, corporate governance, distribution of financial products and services, intellectual property rights, privacy and data protection, employment, civil and contractual liability, and a significant number of other legal fields.

What is artificial intelligence?

Artificial intelligence is “the science and engineering of making intelligence machines, especially intelligent computer programs”.[1] Essentially, artificial intelligence technologies aim to allow machines to mimic “cognitive” functions of humans, such as learning and problem solving, in order for them to conduct tasks that are normally performed by humans. In practice, the functions of artificial intelligence are achieved by accessing and analyzing massive data (also known as “big data”) via certain algorithms.

As set forth in a report published by McKinsey & Company in 2013 on disruptive technologies, “[i]mportant technologies can come in any field or emerge from any scientific discipline, but they share four characteristics: high rate of technological change, broad potential scope of impact, large economic value that could be affected, and substantial potential for disruptive economic impact”.[2]

Despite the interesting debate over the impact of artificial intelligence on humanity,[3] the development of artificial intelligence has been on an accelerated path in recent years and we witnessed some major breakthroughs. In March 2016, Google’s computer program AlphaGo beat a world champion Go player, Lee Sedol, by 4 to 1 in the ancient Chinese board game. The breakthroughs reignited the world’s interest in artificial intelligence. Technology giants like Google and Microsoft, to name a few, have increased their investments in the research and development of artificial intelligence.

Copyright (c) Lavery, de Billy, S.E.N.C.R.L. - L.L.P.

This article will discuss some of the applications of artificial intelligence from a legal perspective and certain areas of law that will need to adapt - or be adapted - to the complex challenges brought by current and new developments in artificial intelligence.

Legal challenges

Artificial intelligence and its potential impacts have been compared to those of the Industrial Revolution, a form of transition to new manufacturing processes using new systems and innovative applications and machines.

Health care
L'intelligence artificielle est certes promise à un bel avenir dans le Artificial intelligence certainly has a great future in the health care industry. Applications of artificial intelligence with abilities to analyze massive data can make such applications a powerful tool to predict drug performance and help patients find the right drug or dosage that matches with their situation. For example, IBM's Watson Health program "is able to understand and extract key information by looking through millions of pages of scientific medical literature and then visualize relationships between drugs and other potential diseases".[4] Some features of artificial intelligence can also help to verify if the patient has taken his or her pills through an application on smartphones, which captures and analyzes evidence of medication ingestion.

In addition to privacy and data protection concerns, the potential legal challenges faced by artificial intelligence applications in the health care industry will include civil and contractual liabilities. If a patient follows the recommendation made by an artificial intelligence system and it turns out to be the wrong recommendation, who will be held responsible?

It also raises legitimate complex legal questions, combined with technological concerns, as to the reliability of artificial intelligence programs and software and how employees will deal with such applications in their day-to-day tasks.

Customer services
A number of computer programs have been created to make conversation with people via audio or text messages. Companies use such programs for their customer services or for entertainment purposes, for example in messaging platforms like Facebook, Messenger and Snapchat. Although such programs are not necessarily pure applications of artificial intelligence, some of their features, actual or in development, could be considered as artificial intelligence.

When such computer programs are used to enter into formal contracts (e.g., placing orders, confirming consent, etc.), it is important to make sure the applicable terms and conditions are communicated to the individual at the end of the line or that a proper disclaimer is duly disclosed. Contract enforcement questions will inevitably be raised as a result of the use of such programs and systems.

Financial industry and fintech
In recent years, many research and development activities have been carried out in the robotic, computer and tech fields in relation to financial services and the fintech industry. The applications of artificial intelligence in the financial industry will vary from a broad spectrum of branches and programs, including analyzing customers' investing behaviours or analyzing big data to improve investment strategies and the use of derivatives.

Legal challenges associated with artificial intelligence's applications in the financial industry could be related, for example, to the consequences of malfunctioning algorithms. The constant relationship between human interventions and artificial intelligence systems, for example, in a stock trading

Copyright (c) Lavery, de Billy, S.E.N.C.R.L. - L.L.P.

platform, will have to be carefully set up to avoid, or at least confine, certain legal risks.

Autonomous vehicles
Autonomous vehicles are also known as “self-driving cars”, although the vehicles currently permitted to be on public roads are not completely autonomous. In June 2011, the state of Nevada became the first jurisdiction in the world to allow autonomous vehicles to operate on public roads. According to Nevada law, an autonomous vehicle is a motor vehicle that is “enabled with artificial intelligence and technology that allows the vehicle to carry out all the mechanical operations of driving without the active control or continuous monitoring of a natural person”.[5]

Canada has not adopted any law to legalize autonomous cars yet. Among the significant legal challenges facing autonomous cars, we note the issues of liability and insurance. When a car drives itself and an accident happens, who should be responsible? (For additional discussion of this subject under Québec law, refer to the ***Need to Know* newsletter, “Autonomous vehicles in Québec: unanswered questions”** by Léonie Gagné and Élizabeth Martin-Chartrand.) We also note that interesting arguments will be raised respecting autonomous cars carrying on commercial activities in the transportation industry such as shipping and delivery of commercial goods.

Liability regimes

The fundamental nature of artificial intelligence technology is itself a challenge to contractual and extra-contractual liabilities. When a machine makes or pretends to make autonomous decisions based on the available data provided by its users and additional data autonomously acquired from its own environment and applications, its performance and the end-results could be unpredictable.

In this context, Book Five of the *Civil Code of Québec* (CCQ) on obligations brings highly interesting and challenging legal questions in view of anticipated artificial intelligence developments:

> Article 1457 of the CCQ states that:
> **Every person has a duty to abide by the rules of conduct incumbent on him, according to the circumstances, usage or law, so as not to cause injury to another. Where he is endowed with reason and fails in this duty, he is liable for any injury he causes to another by such fault and is bound to make reparation for the injury, whether it be bodily, moral or material in nature. He is also bound, in certain cases, to make reparation for injury caused to another by the act, omission or fault of another person or by the act of things in his custody.**
> Article 1458 of the CCQ further provides that:
> **Every person has a duty to honour his contractual undertakings. Where he fails in this duty, he is liable for any bodily, moral or material injury he causes to the other contracting party and is bound to make reparation for the injury; neither he nor the other party may in such a case avoid the rules governing contractual liability by opting for rules that would be more favourable to them.**
> Article 1465 of the CCQ states that:
> **The custodian of a thing is bound to make reparation for injury resulting from the autonomous act of the thing, unless he proves that he is not at fault.**

The issues of foreseeable damages or direct damages, depending on the liability regime, and of the “autonomous act of the thing” will inescapably raise interesting debates in the context of artificial intelligence applications in the near future. In which circumstances the makers or suppliers of artificial intelligence applications, the end-users and the other parties benefiting from such applications could be held liable – or not – in connection with the results produced by artificial intelligence applications and the use of such results? Here again, the link between human interventions - or the absence of human interventions - with artificial intelligence systems in the global chain of services, products and outcomes provided to a person will play an important role in the determination of such liability.

Among the questions that remain unanswered, could autonomous systems using artificial intelligence applications be “personally” held liable at some point? And how are we going to deal with potential

Copyright (c) Lavery, de Billy, S.E.N.C.R.L. - L.L.P.

legal loopholes endangering the rights and obligations of all parties interacting with artificial intelligence?

In January 2017, the Committee on Legal Affairs of European Union ("EU Committee") submitted a motion to the European Parliament which calls for legislation on issues relating to the rising of robotics. In the recommendations of the EU Committee, liability law reform is raised as one of the crucial issues. It is recommended that "the future legislative instrument should provide for the application of strict liability as a rule, thus requiring only proof that damage has occurred and the establishment of a causal link between the harmful behavior of a robot and the damage suffered by an injured party".[6] The EU Committee also suggests that the European Parliament considers implementing a mandatory insurance scheme and/or a compensation fund to ensure the compensation of the victims.

What is next on the artificial intelligence front?

While scientists are developing artificial intelligence at a speed faster than ever in many different fields and sciences, some areas of the law may need to be adapted to deal with associated challenges. It is crucial to be aware of the legal risks and to make informed decisions when considering the development and use of artificial intelligence.

Artificial intelligence will have to learn to listen, to appreciate and understand concepts and ideas, sometimes without any predefined opinions or beacons, and be trained to anticipate, just like human beings (even if some could argue that listening and understanding remain difficult tasks for humans themselves).

And at some point in time, artificial intelligence developments will get their momentum when two or more artificial intelligence applications are combined to create a superior or ultimate artificial intelligence system. The big question is, who will initiate such clever combination first, humans or the artificial intelligence applications themselves?

---

1. John McCarthy, *What is artificial intelligence?*, Stanford University.
2. *Disruptive technologies: Advances that will transform life, business, and the global economy*, McKinsey Global Institute, May 2013.
3. Alex Hern, *Stephen Hawking: AI will be "either best or worst thing" for humanity*, theguardian.
4. Engene Borukhovich, How will artificial intelligence change healthcare?, World Economic Forum.
5. Nevada Administrative Code Chapter 482A-Autonomous Vehicles, NAC 482A.010.
6. Committee on Legal Affairs, Draft report with recommendations to the Commission on Civil Law Rules on Robotics, article 27. (2015/2103 (INL))

Copyright (c) Lavery, de Billy, S.E.N.C.R.L. - L.L.P.