# Intellectual property in open innovation and co-innovation in the field of artificial intelligence

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Moving far beyond the traditional models of closed innovation, artificial intelligence is progressing by means of collaborations and exchanges, both with the academic world and between companies.

In Canada, the United States and Europe, innovation has evolved in ways that have changed the very design of research and development projects. In the world of information technology, closed innovation within one company is generally not sufficient, particularly for technologies using artificial intelligence.

**Distinguishing between collaborative innovation, open innovation and co-innovation**

In the field of information technology, **collaborative innovation** was the first model to replace closed innovation. In this type of innovation, an organization collaborates with various partners to build a value chain that it tries to organize and control. Apple is often cited as an example: it has some control over both the hardware (usually sold under its brand) and the software (third party software is made available through a virtual store that it controls).

The most significant change in recent years has been the arrival of **open innovation**, in which several companies foster innovation both internally and externally[1]. Exchanges between companies are generally targeted to meet the needs of each company. Large companies, such as Samsung, enter into partnerships with start-up companies and assist them in their development.

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Collaborative innovation was therefore a precursor to open innovation. Indeed, the focus in collaborative innovation is on the company creating a new product or developing a new technology by means of the offerings of external parties. Open innovation, on the other hand, has a broader purpose and refers to all the means that can be used by a company to access new technology.[2]

**Co-innovation**[3], or collective innovation, is the emerging model within the artificial intelligence community. It aims to promote an ecosystem that fosters innovation across several entities. Co-innovation can go hand in hand with respect for intellectual property.

It is likely to[4]:

Generate a continuous flow of ideas;
Build a broad pool of knowledge, in particular through sharing data and analysis;
Foster a culture of innovation through a shared vision and common objectives among partners; andCreate tacit convergence strategies between partners that are unique to them and difficult to replicate.

This last point is particularly important for those who fear losing the benefits of their efforts. In this context of co-innovation, stakeholders create complex relationships between themselves, and each becomes difficult to replace. This is currently the case in artificial intelligence for some stakeholders who have developed specialized platforms that integrate into other companies' software. For example, as part of the integration of chatbots, the roles of the developers of these platforms, the companies offering conversation analysis tools, marketing firms and user companies all intersect. The implementation of APIs (application programming interface) between these players makes it possible to exchange information between them in a fairly fluid way, with each stakeholder playing a more important role in its own field of expertise.

**Protecting intellectual property in this context**

Open innovation and co-innovation are not incompatible with the notion of intellectual property. Strong intellectual property rights promote open innovation, according to the most recent studies[5], as they protect members of the innovation community. Moreover, intellectual property can provide a way for stakeholders to coordinate[6] and can even be a reason for a company to innovate in an open way.

For example, where patents are possible[7], they promote interaction between stakeholders during innovation because they ensure the innovation is protected and also disclosed. When the patent application is published, the other stakeholders obtain a fairly complete description of the technology, while at the same time becoming able to establish the identity of the party that holds the rights to it. The publication of the patent is therefore a form of knowledge exchange that also promotes alliances between stakeholders. Moreover, a potential licence would allow the company to earn revenue from a technology it has developed if it chooses not to exploit it itself.

An example of this development in innovation comes from the academic world. Rather than simply licensing their technologies, universities now frequently offer technology transfer services and research partnerships.[8]

Some measures can be implemented to accelerate the development of artificial intelligence solutions:

Adopt a design thinking approach, taking into consideration the fluid nature of innovation.
Identify an ecosystem of partners, particularly keeping an eye on patents and published patent applications.
Establish a flexible contractual framework for sharing data and allowing its use by partners.
File patent applications, where possible.

Facilitate the licensing of your technology to your partners.

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Implementing these measures requires agreements with various partners. It is important for your lawyers and patent agents to be involved in your company's innovation process. In particular, they must ensure that the contracts to be entered into and the measures to protect intellectual property are in line with the desired approach to innovation.

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1. Chesbrough, Henry William. *Open innovation: The new imperative for creating and profiting from technology*. Harvard Business Press, 2003.
2. Gallaud D. (2013) "Collaborative Innovation and Open Innovation. " In: *Carayannis E.G. (eds) Encyclopedia of Creativity, Invention, Innovation and Entrepreneurship*. Springer, New York, NY
3. Lee, Sang M. and Silvana Trimi. "Innovation for creating a smart future" *Journal of Innovation & Knowledge* 3.1 (2018): 1-8
4. *Ibid.*
5. Da Silva, Mário APM. "Open innovation and IPRs: Mutually incompatible or complementary institutions?" *Journal of Innovation & Knowledge* 4.4 (2019): 248-252
6. Bortolami, Giovanni. "Risolvendo il paradosso dell'innovazione: come la protezione della proprietà intellettuale promuove l'innovazione aperta." (2018).
7. Algorithms alone are usually not patentable, but several applications of artificial intelligence can be. See: https://www.lavery.ca/en/publications/our-publications/3167-artificial-intelligence-intellectual-property-cross-border-challenges-to-protect-personal-information-and-privacy.html.
8. Nambisan, Satish, Donald Siegel and Martin Kenney. "On open innovation, platforms, and entrepreneurship." *Strategic Entrepreneurship Journal* 12.3 (2018): 354-368.

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