Intellectual Property & Automated intelligent systems

I. Introduction

Amsterdam is one of the world's most important start-up hubs. Within that ecosystem, there is a need for specialist legal knowledge, because new technologies and developments lead to innovative, interesting and complex legal issues. TK Tech is an Amsterdam-based tech hub of TeekensKarstens attorneys, specialized in tech law. TK's tech lawyers are experts in fields such as privacy (GDPR), intellectual property law, IT law, M&A and new tech.

In the upcoming period, TK Tech will update the members of the Swedish Chamber of Commerce on relevant and interesting legal tech issues. Last time we spoke about the privacy related aspects of blockchain. In this *What's Next? Updates on legal tech* we will discuss the topic "Intellectual Property & Automated intelligent systems".

For innovative companies, the protection of their creative and innovative products and services is of great importance. This protection is, among others, ensured by intellectual property rights. Autonomous intelligent systems (hereafter: "AIS") and robotics are increasingly involved in the creative processes of these innovative companies. This raises the question if the products and services which are created by AIS are also protected by intellectual property law? In this contribution, we will provide answers on the question how AIS and intellectual property law interact. First, we will discuss the relevant intellectual property rights. Subsequently we will describe AIS. At the end of this contribution we will explain where intellectual property and AIS interact.

I. What are intellectual property rights?

Intellectual property law covers different areas of law, such as trademark law, design law, patent law and copyright law. They all aim to protect intangible creations of the mind. These creations can be, inter alia, inventions, artistic works, symbols and/or names.

These creations of the mind deserve to be adequately protected. Not only in the interest of their creator, but also for the public interest. Intellectual property rights enable people and organisations to earn recognition and/or gain financial benefit from their creativity, whether this is an invention, creation or a design. The proprietor of the intellectual property right has an exclusive right to exploit the work. As a consequence, protection by intellectual property rights encourages and enhances innovation and creativity, to the benefit of the society as a whole. We will shortly address one specific intellectual property right: copyright.

Copyrights

Copyrights in Netherland are protected by the Copyright Act ("*Auteurswet*"). The Copyright Act protects creative works, such as literary works or architectural designs. A copyright arises automatically upon creation of the work. No formalities are necessary to obtain copyright protection. The Copyright Act gives protection to all works that have a own creative character and the personal imprint of the author of the work. In case law is determined that protection is given to a form of a work that is the result of creative human labor. This means that a human being must be involved in the creative process. The creator of the work is entitled to the copyright. The creator of a work can be a natural person but can also be a legal entity. In the Netherlands, a copyright gives protection for a period of 70 years after the death of its creator.[1]

II. What is AIS?

The European Commission defined AIS as "*systems that display intelligent behaviour by analysing their environment and taking actions – with some degree of autonomy – to achieve specific goals"* [2] AIS imply

[1] Article 37 DPA.
[2] COM (2018) 237 final, par. 1.

a human-type of behaviour, in the sense that they perform acts that require intelligence when done by humans.[3] AIS can be software-based, but it can also be embedded in hardware devices, such as inter alia autonomous cars, drones or robots. AIS are thus used in a wide variety of applications.

Robots

Robots are a special kind of AIS. Robots were first only used to perform certain tasks that did not require a lot of autonomy or intelligence. However, in the past few years, robots have become more autonomous and intelligent. To give an example of the robots that are being used at the moment. A while ago, Boston Dynamics released Spot. This commercial robot went viral multiple times: it danced to Bruno Mars and pulled a truck. It climbs stairs and is able to open doors, even when someone is trying to stop it from opening it.[4] Spot seems to be fully autonomous, but in fact Spot is physically performing the tasks the controller has programmed Spot to do. A lot of research is carried out on real autonomous robots approaching human intelligence. However fully autonomous robots are not expected in the near future. No accurate prediction is possible, but researchers think this will take another 100 years.[5]

III. Where do intellectual property and AIS meet?

As AIS are becoming more intelligent and autonomous, their ability to create increases as well. This is where intellectual property law and AIS interact.

For instance if a natural person writes a book, that book will be protected by a copyright. Most of the times the writer of the book will the proprietor of that copyright. But what happens if the natural person writes the book in collaboration with an AIS? This is not fiction: in 2017, Dutch writer Ronald Giphart wrote a sequel to Asimov's book "*I, Robot*" in collaboration with a robot.[6] In this project, Giphart's oeuvre was entered into the AIS. Giphart just started to write a sentence, after which the robot suggested multiple follow-ups. The AIS did not only propose the words, but it also determined the plot and came up with characters and the title of the book.

The question arises if the book which is the product of a collaboration of Giphart and an AIS is also protected by a copyright? And if so, who will be the proprietor of the copyright? Giphart, the AIS or are they joint owner of the copyright?

In order to be protected by copyright, the work has to meet the criteria developed in case law. It should be an 'expression of the intellectual creation of an author'. In other words, the work should have a own, original character as well as the personal imprint of the author.[7] The own original character implies that it is not copied from an another work. The personal imprint of the author means the work is the result of human creativity and of creative choices.[8] Assuming that the book written by Giphart and the AIS together is original, the question arises if the book is also the result of human creativity and of own creative choices of a human? In this case, it can be argued that Giphart made at least some creative choices. After all Giphart made creative choices at the beginning of every sentence of the book. The AIS ended the sentence. In that sense, it can be argued that the robot was a smart tool for Giphart. In this way Giphart could be regarded as the author of the book and therefor the proprietor of the copyright.

However, human intervention will be minimised or -in the future - completely absent. In those situations the work will probably no longer be the result of any human creativity and/or creative choices of a human. If no human creative activity is involved in the creative process than it seems unlikely that the work would

[3] A. Ramalho, 'Will robots rule the (artistic) world?', *Journal of Internet Law* 2017/7, p. 2.
[4] You Tube, <https://www.youtube.com/watch?v=aFuA50H9uek>.
[5] See: K. Grace et al., 'When Will AI Exceed Human Performance? Evidence from AI Experts', 24 May 2017; N. Joshi, 'How Far Are We From Achieving Artificial General Intelligence', *Forbes* 10 June 2019; J. Vincent, 'This is when AI's top researchers think artificial general intelligence will be achieved', *The Verge* 27 November 2018.
[6] https://nos.nl/artikel/2178484-giphart-experimenteert-samen-schrijven-met-een-robot.html.
[7] ECJ 16 July 2009, ECLI:EU:C:2009:465 (*Infopaq),* par. 37; HR 4 January 1991, ECLI:NL:HR:1991:ZC0104 (*Van Dale/Romme*).
[8] HR 30 May 2008, ECLI:NL:HR:2008:BC2153 (*Endstra Tapes).*

be protected by a copyright. As discussed before the ECJ and Dutch Supreme Court require *human* creative choices in order to get protection of the Copyright Act.

Even if an AIS could be the proprietor of a copyright in the future, other practical problems arise. What happens to the duration of the protection of the copyright. A human dies at some point in time, after which the copyright is protected for a maximum of 70 years. An AIS probably does not die, at least not in the way humans die. What are the consequences for the duration of the protection of the copyright. We can conclude that the Copyright Act in its current form is not ready for non-human works.

IV. Conclusion

AIS are increasingly involved in all kinds op innovative processes which lead to innovative products and services. The Copyright Act does not provide any clear answers to the question if an AIS can be regarded as proprietor of a copyright. The applicable legislation is outdated and needs further explanation in the light of new technologies, such as AIS.

The European Commission also recognized that intellectual property law needs further attention when it comes to AIS.[9] Only time will tell how the challenges of AIS and intellectual property law will be dealt with, but there is a lot of work ahead for regulators, courts and scholars. Untill then, the implementation of AIS in innovative businesses needs case-by-case consideration. As always in innovative ecosystems, this requires software engineers, managers and tech lawyers to unite!

[9] COM (2018) 237 final, par. 3.2.