AI: Understanding the IP: An In-depth Analysis of Copyright and the Challenges Presented by Artificial Intelligence

Nina Fitzgerald, Partner; **Eoin Martyn,** Senior Associate; **Caroline Christian,** Lawyer; **Jasmin Collins,** Summer Clerk, Ashurst, discuss the issues that arise in the ownership of AI-generated intellectual property.

Ray Kurzweil, the leading US author, inventor and futurist (and current Director of Engineering at Google) famously defined AI in 1990 as "*the science of making computers do things that require intelligence when done by humans*". Whilst it has generally been accepted that computers might be capable of performing mathematical and scientific tasks, creativity has long been considered a uniquely human quality. However, 30 years on from Kurzweil's definition, computers are creating all types of original works including artistic, literary and musical works.

Traditionally, copyright protection has been available in instances where technology has been used as a tool to assist a person to create a work (for example, using a camera to take a photograph). In these circumstances, the person has been credited as the creative mind that identified or set the scene resulting in the original work. Recent advances in machine learning and the growth of computing power have meant that AI can now create works which are, arguably, independent of human creativity. This raises the question of whether these AI-created works can be protected by copyright?

In this article, we examine the current legal framework for copyright protection in Australia and areas of potential reform, the Court's treatment of technology-assisted works and how copyright interacts with artificially intelligent machines and AI-created works.

Current legal framework

In Australia, an original work can be the subject of copyright protection provided that certain criteria are met.

One category of works protected by copyright is "literary works". The definition of "literary work" in the *Copyright Act 1968* (Cth) (the **Act**) expressly includes a computer program. Therefore, the source code that forms the software of a computer program is protected as a literary work.

Ownership of the copyright in a computer program will generally be held by the authors of the code for the software that forms it. Copyright in the software that powers an artificially intelligent machine that delivers intuitive functionality, such as checking the weather or traffic conditions, subsists and is first held by the person or company that developed the software.

But what about works created by the AI system itself?

Relevantly, each work must have an "author". Authorship necessitates that a "qualified person" be the author of a work in order for copyright to subsist. A qualified person is defined in section 32 of the Act as an Australian citizen or a person resident in Australia (under *the Copyright (International Protection) Regulations 1969* foreign nationals from certain countries obtain the same protection under Australian copyright laws). Of course, AI systems are neither human persons nor citizens.

Originality, on the other hand, requires a degree of human ingenuity. This was confirmed by the High Court in *IceTV Pty Ltd v Nine Network Australia Pty Ltd* [2009] HCA 14 where time and title information of scheduled television shows were not sufficiently original to attract copyright protection. The High Court held that originality requires some independent intellectual effort or sufficient effort of a literary nature, during the creation of the work.

Can AI-created works be protected using copyright under the Act?

It can be difficult to discern ownership for output generated by more developed AI systems. Copyright protection of the output behind an AI system is not a causal result of human action but can be attributable to the AI system itself.

A well-known example of a wholly AI-created work is The Next Rembrandt, a 2016 portrait created by an artificially intelligent machine following large scale analysis of existing works by the Dutch painter, Rembrandt. The artificially intelligent machine used deep learning algorithms and facial recognition techniques to produce a 3D textured output that mimicked the artist's distinct style but was otherwise a unique and original painting. Although the artificially intelligent machine was given parameters to guide the output, the level of autonomy showcased the growing capabilities of machine learning.

Independently generated, AI-created works such as The Next Rembrandt present a significant challenge to the fundamental requirement of authorship, which underpins the Australian copyright regime.

Whilst not tested in Australia, it is likely that copyright ownership of the Next Rembrandt would meet the same fate as the phone directories in *Telstra Corporation Limited v Phone Directories Company Pty Ltd* [2010] FCAFC 149. In this case, the Full Federal Court considered whether copyright subsisted in

phone directories, which were largely compiled by computer-automated processes using a number of databases. Whilst the computer automated process stored, selected and compiled the data to produce the directories in their final form, the databases from which the data were drawn were updated by humans.

Although there was an element of human involvement in the creation of the works, the Full Court held that copyright did not subsist in the directories. The Full Court found that the creation of the material form of the directories was carried out by a computer program, with no substantive human input. Considering the requirement that there be a degree of intellectual effort in the creation of the work, the Full Court found it was not sufficient that this originality requirement was satisfied in the work's preparatory steps, but was instead needed in the creation of the work itself.

Similarly, the Full Federal Court in *Acohs Pty Ltd v Ucorp Pty Ltd* (2012) 201 FCR 173 considered copyright protection over work largely created by a computer-automated process. The Court considered whether copyright subsisted over safety information sheets created by a computer programme that arranged the relevant data into the required format. While Acohs asserted that copyright subsisted in the HTML code of the safety information sheets, the Court found that the machine-generated HTML codes were not subject to copyright protection as they were not written by human authors.

Therefore, under the current legal framework in Australia, while the creator of an artificially intelligent machine will generally retain copyright over the machine's source code, AI-created works will not attract the same copyright protection, as these works lack the element of human intervention.

Potential reform

If AI-created works could be protected by copyright, who should be considered to be the author? Is it the person who uses the AI to create a work, even if all that person did was operate the machine? Or, the person who created the AI (e.g. by developing the algorithms)? Or, most controversially, the machine itself, which could then perhaps constitute an exception to the rule that the author of a copyright work is the first owner of any copyright subsisting in it (i.e. in a similar manner that an employer is the owner of any copyright subsisting in works created by an employee under the terms of the employment contract)? Potentially complicated issues of joint ownership and the appropriate duration of copyright protection afforded to AI-created works could also arise.

Looking overseas, the UK allows copyright to subsist in AI-created works by attributing authorship of the works to the creator of the artificially intelligent machine or computer program. Section 9(3) of the UK's *Copyright, Designs and Patents Act 1988* (**CDPA**) provides that the author of a work which is "computer-generated" shall be taken to be the person "by whom the arrangements necessary for the creation of the work are undertaken". Section 178 of the CDPA further defines a computer-generated work as one that "is generated by computer in circumstances such that there is no human author of the work".

The rationale behind the UK legislation is to create an exception to the requirement of human authorship in order to provide due recognition and protection for the work that goes into creating a program capable of independently generating works, even where much of the final work's originality is contributed by the machine.

A shift towards the UK approach would present a number of challenges, including how the duration of copyright protection should be treated? Under section 33 of the Act, copyright typically subsists in Australia for 70 years after the author's death. As artificially intelligent machines do not "die", according to its ordinary meaning, section 33 would not have the same time-limiting effect. In the UK, section 12(7) of the CDPA provides copyright protection for 50 years from the end of the year in which the work was made. A similar approach is adopted in Australia for sound recordings and cinematographic films, whereby copyright continues to subsist until 70 years after the year in which the copyright material was first made public (section 93(2) of the Act). A comparable approach could be adopted in Australia for AI-created works.

Further developments

Considerations of the impact of AI on IP are being made globally. In December 2019, the World Intellectual Property Organisation called for public submissions as part of a public consultation on AI and IP policy. Comments were submitted by various member states and individual industry groups, including the Australian government.

As part of its response to the WIPO request for submissions, the Australian government considered copyright and grappled with the complicated issues of authorship and ownership in light of the effects of attributing copyright to AI-created works. Whilst the government did not provide any conclusive remarks, they did highlight that it would be useful to understand what would be considered an 'AI-generated copyright work' and how much of a role AI should have in creating a work, in order for the AI to be attributed with copyright suggesting that the Australian government may be considering reform.

AI certainly poses challenges for copyright protection. Given the recent advances in machine learning and the growth of computing power, the distinction between technology-assisted works and AI-created works may soon diminish. It is important to consider whether the current legal framework for copyright in Australia requires reform to keep pace with advancements in technology. It is encouraging to report that the Australian government is considering these issues, and we expect to see further debate on the intersection of AI and copyright in the years to come.