**ARTIFICIAL INTELLIGENCE AND INTELLECTUAL PROPERTY: CHALLENGES TO THE EXISTING LEGAL FRAMEWORK**

Artificial Intelligence (“AI”) is no longer a mere computer which is capable of thinking or reasoning. It now encompasses a variety of techniques such as machine learning, logic programming, probabilistic reasoning and many others. But what unifies all these is the ability to replicate human behaviour. This raises many issues. One such issue that the world’s legal framework has to grapple with is that AI is capable of creating the subject-matter for Intellectual Property (“IP”) rights, and therefore also items that can infringe the IP rights of others.

Such recent developments in AI raise new questions regarding the purpose and scope of the protection of IP rights. Most IP laws in the UK and beyond require an inventor or an author to be a person with their own legal identity. On the basis that AI has become capable of inventing and creating, changes to the existing IP framework may be required. As is often the case, laws (in this case IP laws) may be lagging behind the swift development of technology that they were not created in contemplation of.

This has been recognised as a burning issue by many of the world’s IP authorities – for example, the UK’s Intellectual Property Office (UKIPO) has launched a consultation, which closes on 30 November, calling for views across the range of intellectual property rights. Likewise, the World Intellectual Property Office (WIPO) is holding its third “Conversation on Intellectual Property and Artificial Intelligence” on 4 November.

In this article we consider some current gaps in patent and copyright law, as these are the two areas of IP law of greatest importance in the context of AI. We’ll concentrate on English law, but many of the principles are similar elsewhere in the world.

1. **Ownership of patents in “inventions” created by AI**

Patents protect “inventions”, such as new technological processes, which AI can, of course, create.

According to existing patent law, only a natural person (i.e. a human) can, and must, be identified as an “inventor” in a patent application. This was reflected recently in various decisions relating to patent applications concerning inventions created by AI system called DABUS. Dr Stephen Thaler, the creator of the DABUS system, applied for patents in his own name, but listed DABUS as the inventor. Applications were refused by the UKIPO, the European Patent Office and the United States Patent and Trademark Office. The legal frameworks applied by all three IP offices required the inventor to be human - AI systems cannot be inventors and therefore a patent cannot come into existence in relation to technology that AI “invents”.

Dr Thaler appealed against the UKIPO decision in the English courts. However, the court upheld the UKIPO decision. The judge clarified that it was common ground that DABUS was not a natural person, so any patent application listing DABUS as the inventor was bound to fail.

Although current law may require revision in order to reflect technological reality in this regard, the judge in the DABUS case indicated that there is room for argument that the owner of an AI system that invents something can themselves be listed as the inventor: *“it would be far easier to contend that Dr Thaler was entitled to the grant of the patent … on the ground that he (Dr Thaler) owned the machine that did the inventing*”*.* This approach would borrow from copyright law.

1. **Ownership of copyright in “works” created by AI**

Copyright law in general protects literary, dramatic, musical and artistic works. This can include software code, which is classified for these purposes as a literary work, and is an example of something that can be created by AI.

Generally, copyright law requires there to be some degree of human-generated creativity (it is, after all, an intellectual property right). But in the UK, there is a special category for computer-generated works provided that an originality requirement is met, which could be applied to AI creations. Under the existing legal framework, to be original the work must be “the author’s own intellectual creation”. This means it must result from the author’s free and creative choices and exhibit their “personal touch”. However, it is not clear how these concepts can apply to works created by AI.

The Copyright, Designs and Patents Act 1988 (“CDPA”) provides for some exceptions to the originality requirement. In particular, CDPA sets out that “entrepreneurial works” such as sound recordings, films, broadcasts and typographical arrangements are not required to be original and therefore copyright in such works may belong to producers, makers and publishers, regardless of their creative input.

These inconsistencies demonstrate the need for further development of the law in this area.

1. **Infringement of patents by things created by AI**

There is another potential gap in patent law concerning the infringement of patents. Legally AI cannot infringe the UK patent law as the law only recognises “a person” (i.e. someone with a legal identity, whether an individual, a company etc) as infringing a patent, and it does not set out how liability might be established when a person is not involved. Does this mean that an AI system could infringe a patent with impunity? Or would the law apply the principles suggested above, that it is the owner of the AI system that would be found liable for the infringement?

Unlike copyright, there is no knowledge requirement in order to infringe the patent. Given that AI systems are becoming more and more autonomous, the owner of an AI system may not even be aware that an infringing activity is taking place.

1. **Infringement of copyright by things created by AI.**

Copyright can be infringed when someone uses, copies or adapts a “substantial part” of a copyright work without the owner’s permission. In order to infringe copyright, the infringer must have access to a copy of the original work (unlike for patent infringement). Unless imbued with the ability to determine the level of borrowing necessary to constitute infringement, it would be easy for AI to infringe somebody’s copyright, for example by replicating some existing software code.

When AI generates a work that infringes copyright, it is likely that the infringer would be “a person who has control over infringement”. That is usually going to be the owner of the AI system, because the owner has the ability to turn the system off or (perhaps) instruct it not to do the infringing act.

**Conclusion**

The UK is considered to have one of the best IP environments in the world and the UK Government aims to make the UK a global centre for AI and data-driven innovation. The protection of IP rights is an efficient economic tool that incentivises and rewards creativity and therefore it must be regulated accordingly. It is vital that these protections keep pace with the changing technological environment and that the existing legal framework is adapted accordingly.

iLaw is holding a webinar on this hot topic on 26 November. If you would like to receive further information or to register, please contact Bonnie Wat at bonnie.wat@ilaw.co.uk