

Artificial creativity—is the IP system ready for robot inventors?

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IP analysis: At a conference organised by World Intellectual Property Organization in June 2019 entitled 'AI: decoding IP', Lord Kitchin, Justice of the Supreme Court, gave one of the opening speeches. Although Lord Kitchin began his speech by commenting on the profound promise of artificial intelligence (AI), he went on to warn that it will bring with it challenging issues for regulators and lawmakers. Katharine Stephens, partner and co-head of Bird & Bird's London IP department, considers a few of the questions raised in Lord Kitchin's speech.

In his speech, Lord Kitchin argues that AI is becoming increasingly able to carry out 'all or the predominant part of the creative and innovative work' in the creation of concepts and inventions. According to current UK patent law, if AI was to invent something, would the creator of the AI be able to patent it? Who would be the inventor and to whom would the invention belong?

AI cannot be the inventor of a patent under the law as it currently stands because 'devising' an invention is essentially a human activity which involves contributing to the inventive concept of the invention. Financial or administrative contributions towards 'devising' an invention are insufficient, as is identifying a problem to be solved or merely showing that the invention works.

There are many instances where AI is already being used as a tool to help develop new inventions and, as such, it is arguably no different to using any other tool (such as a microscope). If the matter is considered in this light, the inventor or joint inventors will be those people who use the AI to solve the problem. This may include the person or people who write the AI algorithms, those who train the AI system, those who harness the system to solve the particular problem and possibly those who recognise that an invention has been made. Mere ownership of the AI system would not qualify someone to be an inventor.

If there really is no human involved in contributing to the inventive concept, then, under the current law, no one can claim to be the inventor and it will not be possible to protect the invention by applying for a patent. However, as noted, the way to avoid this issue is to regard AI as a tool, although a very sophisticated one, in the invention process. The invention will, consequently, belong either to the human deviser or their employer (section 7 of the UK Patents Act 1977). It should be noted in passing that AI cannot be said to be an employee—another pointer to the fact that inventing is a human activity.

How would UK copyright law deal with AI coming up with independent, derivative work (independent in the sense that the expression of the computer in the form of a 'work' has become ever more remote from the original work) created entirely by AI coming up with its own inventions?

Were it not for a specific provision of the UK's Copyright Designs and Patents Act 1988 (CDPA 1988), AI-generated literary, dramatic, musical or artistic works would be disqualified from copyright protection. However, CDPA 1988, s 9(3), states that in relation to computer-generated works, the author is taken to be the person who made the arrangements necessary for the creation of that work. AI-generated works fall into the same category. As such, the right granted under CDPA 1988, s 9(3) is similar to the other economic copyrights which protect films, sound recordings and broadcasts. Indeed, where such works are created using an AI system, they are also likely to be protected by copyright.

Are there any changes that need to be introduced to UK law to address this ambiguity of ownership in the

case of AI either inventing something or creating independently its own work?

At present, the patent system is coping with establishing human inventors and therefore ownership of inventions where AI has been used in the invention process. But as AI takes a greater part in the process, it may become increasingly challenging to determine such questions in a uniform fashion. For example, will it be sufficient to say that the person who set up the AI system to solve the problem is the inventor and how will 'setting up' the system be judged? But if the radical step of awarding 'personhood' to AI is taken, then it will affect more than just the test for who owns a patent, it will also go to the fundamental issue of inventive step, otherwise known as 'obviousness'.

In contrast, in the copyright sphere, the UK is one of the very few countries that grants copyright to computer-generated literary, dramatic, musical or artistic works and therefore has an answer for AI-generated works. However, questions have been raised as to whether CDPA 1988, s 9(3) is consistent with the Court of Justice of the European Union's requirement of originality. Originality is a human trait, as it requires the intellectual creation of an author which represents an expression of their personality (Infopaq Case C-5/05). The UK courts have not, to date, considered the relationship between CDPA 1988, s 9(3) and originality. One view is that there is no such requirement in the section. On the other hand, if there is such requirement, to whom does it relate? Is it a requirement of the person making the arrangements necessary for the creation of the work or is an objective test applied to the resulting work, ie would the resulting work, if created by a human, have to pass the originality test?

Aside from these issues, there is also the practical question of where to draw the line when a human uses AI as a tool in creating a work. Where is the boundary between the human-generated work and the computer-generated work? Furthermore, who can claim to have made the 'arrangements necessary for the creation of the work'? With the number of people potentially involved in developing AI systems, there could be a large number of candidates and, consequently, the potential for disputes.

According to Lord Kitchin, traditionally notions of inventorship have revolved around the idea of human creation and the individuality of the inventor insofar as individuals are incentivised to 'disclose their inventions to the world in return for a monopoly of a certain duration'. Given that AI does not respond to incentives in the same way as humans, would the same rules of the game apply?

Obviously, AI itself is not, at present at least, incentivised by money, recognition or kudos. But those devising and using AI systems are and, to that extent, the rules of the game have not changed.

If the patent system were to be changed and AI considered to be an inventor, rules would then have to be laid down as to who should own the invention. Questions would then need to be asked as to whether society wants to reward the owners of and investors in AI systems? Changing patents into a pure economic right would have a significant impact on the system.

Lord Kitchin also questions whether extending patents to AI would lead to the patenting system becoming 'swamped by computer generated inventions and end up stifling human innovation?' Is this a concern that you share?

Lord Kitchin in his speech emphasised the word 'human' and, by this, I think he intended to question whether it is right to compare the human process of innovation with that of AI and whether in the long run it is beneficial for human invention to do so. I share his concerns about where changing the anthropocentric view of patent invention would end up.

For an invention to be patentable, it 'must be new and not obvious in the light of existing public knowledge'. Lord Kitchin wonders 'in terms of the common general knowledge, how does one assess what is routine information to a computer?' Where would the patent system draw this line?

At present, obviousness is judged through the eyes of the skilled person who applies their technical understanding

and common general knowledge to the teaching of the patent. As Jacob LJ so memorably put it in *Technip France SA's Patent* [2004] RPC 46, the skilled person, 'if real, would be very boring—a nerd.' That is because he or she is taken to have read all the prior art but be entirely unimaginative.

On the face of it, AI seems to comply with Jacob LJ's definition of a nerd, but increasingly such systems are seen as inventive. If AI is granted 'personhood' and therefore can be a 'devisor' of an invention in its own right, it would only be consistent to judge obviousness by reference to a skilled AI system and taken to this conclusion, arguably nothing will ever be inventive.

However, as already mentioned, patent law at present views AI as a tool used in the inventive process. A skilled person is considered to have at his or her disposal the means and capacity for routine work and experimentation and, at some point, AI may be considered as such a means. If it is, will it affect the standard for inventive step? Will it also lead to the point that nothing will be considered inventive in the eyes of the law even if it is surprising and inventive to the human?

In the long run, rather than straining the fundamental building blocks of the patent system to accommodate AI-generated inventions, it might be better to consider rewarding such activity with a different, economic right aimed at encouraging investment and development of AI systems.

Interviewed by Tom Inchley.

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