Response to UKIPO Open Consultation Artificial Intelligence: Call for Views

prepared by

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The aims of the patent system

1. What role can / does the patent system play in encouraging the development and use of AI technologies?

I am delighted that the UKIPO is seeking views on the subject of AI inventions. This is difficult intellectual terrain on which there are a variety of views. The patent system can certainly play a role in encouraging the development and use of AI technologies. However, the first question is if it should (in a variety of respects) and if yes, then how. The UK should aspire to be a leader in 'ethical safe and inclusive AI' with the potential to adjust legislative requirements.

As yet, the taxonomy related to AI systems has not been agreed. WIPO notes three areas of interest: (1) machine-created works; (2) AI systems; and (3) the data AI relies on to operate.

Further, I suggest that the UKIPO publish data on the prevalence of AI related patents applied for and granted in the UK to provide an indication of rate, scope and nature of AI inventions.

Additionally, the UKIPO could commission a survey of firms that design and develop AI technologies to gather data to glean a deeper insight into whether the patent monopoly incentive is relied upon for their investment of resources into the research and development of AI technologies.

To enhance the wider debate as to whether a monopoly incentive is warranted, I advocate the UKIPO publish additional guidance as to the advantages and disadvantages of granting potential 20year AI technology monopolies and how they may differ from other platform technologies.

AI as an inventor

2. Can current AI systems devise inventions? Particularly:

(a) To what extent is AI a tool for human inventors to use?

(b) Could the AI developer, the user of the AI, or the person who constructs the datasets on which AI is trained, claimed inventorship?

(c) Are there situations when a human inventor cannot be identified?

Although AI systems may devise inventions, I am not convinced that compelling arguments have been put forward to explain why there is a 'need' to reward AI by naming the non-human AI system as inventor. While further analysis and research is needed, I suggest that humans should have involvement in the invention process and/or responsibility as 'controller'.

With respect to situations where a human inventor cannot be identified, I recommend that the UKIPO commission a high-level expert group of technology ethics experts to recommend key principles and ethical implications, risks and rewards. For example, in December 2019 the University of Montreal released the Montreal Declaration of Responsible AI, a document agreed upon by 100 different experts comprised of technology professionals and ethicists.

It may be that a new protocol requiring human involvement in problem identification, directing and overseeing AI systems to ensure they are ethical, safe and inclusive could meet the human inventor requirement under the s.7(3) Patent Act 1977.

3. Should patent law allow AI to be identified as the sole or joint inventor?

I agree with the current approach of the UKIPO hearing decision in matter involving the AI machine DABUS that a non-human inventor cannot be regarded as an inventor under the Patent Act 1977.

I advocate that a 'cautious approach' is necessary and that to allow AI systems to be designated as a non-human inventor is premature as there are too many unknown consequences, especially as the patent law system does not operate in isolation. There are potential social, safety, inclusivity as well as economic consequences. I am guided by Professor Nick Bostrum, Oxford University and author of *Superintelligence: Paths, Dangers and Strategies* (2016) and his view that 'superintelligence is the most daunting challenge humanity has ever faced'. AI technology has given rise to numerous ethical dilemmas and controversies and these should be carefully studied to avoid any potential unintended consequences. A cautious approach is also advocated in the USPTO's Public Views on Artificial Intelligence and Intellectual Property Policy published in October 2020 (see USPTO_AI-Report_2020-10-05.pdf).

I recommend that different approaches be modelled or be the the subject of 'sandbox' exercises as is common in several disciplines, notably the accounting discipline.

However, I suggest that a new protocol could be devised to ensure human involvement in directing and overseeing AI systems to ensure they are ethical, safe and inclusive. Potentially, such a protocol could provide the basis for potentially meeting the human inventor requirement under the s.7(3) Patent Act 1977.

4. If AI cannot be credited as an inventor, will this discourage future inventions being protected by patent? Would this impact on innovation developed using AI? Would there be an impact if inventions were kept confidential rather than made public through the patent system?

I acknowledge WIPO's position that 'AI is increasingly driving important developments in technology and business. It is being employed across a wide range of industries with impact on almost every aspect of the creation' and this raises a number of policy questions' (see Artificial Intelligence and Intellectual Property Policy (wipo.int)).

If AI cannot be credited as an inventor, an alternative approach could involve creating a new system similar to that developed to reward database rights. Currently there are two types of IP protection for databases: *sui generis* data base rights and copyright. Both allow the owner to control certain uses of their database. The UK implemented the directive through the Copyright and Rights in Databases Regulations 1997.

5. Is there a moral case for recognising AI as an inventor in a patent?

A moral case for recognising AI as an inventor in a patent is not obvious. It is unclear how an AI system would respond to being noted as inventor or not.

6. If AI was named as sole or joint inventor of a patented invention, who or what should be entitled to own the patent?

The law currently recognises individual human and the corporate legal personality of companies as owners of property such as patents. Companies have human controllers, namely the board of directors, who have collective and personal liability under the various UK company legislation and soft law codes to regulate behaviour.

I again recommend a cautious approach and affording an AI system itself ownership rights is premature. It may be that rather than conceive of ownership as we now know it, a different approach might be designed in the time to come, however further research is needed.

Conditions for grant of a patent

7. Does the current law or practice cause problems for the grant of patents for AI inventions in the UK?

On this point I support the views of the Chartered Institute of Patent Attorneys (CIPA), the representative body for the patent attorney profession, experts in patent law and practice, which should be highly regarded.

I would note however, that the current UK and international patent registration system relies on highly skilled patent examiners and thus patent examination of AI patents is a likely resource issue that needs to be managed to ensure that the legal requirements of the patent legislation is met.

8. Could there be patentability issues in the future as AI technology develops?

I can envisage that certain types of AI inventions that are deemed not to be ethical, safe and inclusive should be excluded from patentability and the patent monopoly privilege.

I draw the UKIPO's attention to the Norman AI system (described as "psychopath") developed by the Massachusetts Institute of Technology (MIT) with the express purpose of demonstrating that AI cannot be unfair and biased unless such data is fed into it.

Exclusion from patent rights

9. How difficult is it to secure patent protection for AI inventions because of the list of excluded categories in UK law? Where should the line be drawn here to best stimulate AI innovation?

On this point I support the views of the Chartered Institute of Patent Attorneys (CIPA), the representative body for the patent attorney profession, experts in patent law and practice, which should be highly regarded.

10. Do restrictions on the availability of patent rights cause problems for ethical oversight of AI inventions?

I recommend that the UKIPO commission a high level expert group of technology ethics experts to recommend key principles and ethical implications, risks and rewards and consider developing its own AI and Ethics board to oversee patent applications involving AI inventions.

Disclosure of the invention

11. Does the requirement for a patent to provide enough detail to allow a skilled person to performance an invention pose problems for AI inventions?

On this point I support the views of the Chartered Institute of Patent Attorneys (CIPA), the representative body for the patent attorney profession, experts in patent law and practice, which should be highly regarded.

Infringement

15. Who is liable when AI infringes a patent, particularly when this action could not have been predicted by a human.

Knowledge or *mens rea* is not a legal requirement of primary patent infringement under the Patent Act 1977.

16. Could there be problems proving patent infringement by AI? If yes, can you estimate the size and the impacts of the problem?

I suggest that access to the alleged infringing AI system to prove infringement could indeed be difficult. Such access would need to be requested during the disclosure proceedings in the patent litigation process.

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