Response to call for views: patent questions

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We commend the IPO for investigating the implications of AI for patent policy. This topic is one that requires careful thought, and the outcomes of which might alter the long-term trajectory of R&D in the UK.

We expect the IPO will receive insightful responses to the questions posed in its Call for Views. However, the aim of our submission is not to address these questions; others will provide better responses than we could. Instead, we analyse evidence that the IPO could collect to guide policy in this area. Some of this evidence, we think, could significantly influence decisions that the IPO and government will have to make.

Our comments address the idea of granting patents to AI as an inventor, assuming AI can pass the threshold of inventiveness required under patent law. The Call for Views points out that patents stimulate innovation in two ways: i) by encouraging investment in R&D, and ii) by publishing patent specifications, which allows others to learn of the technical advances. This second way is commonly known as the "disclosure function" of patents. We limit our comments on granting patents to AI as an inventor to these two functions.

We first turn to the disclosure function of patents. We doubt that evidence on the disclosure function could justify awarding patents to AI. Our doubts are based on three reasons. First, leading theorists are split about whether the disclosure function by itself is sufficient to justify the patent system.[1] Second, studies indicate few researchers use patent specifications before inventing.[2] And third, as the IPO identifies with Question 11 in the Call for Views, the black box nature of many AI inventions likely renders patent specifications even more opaque than they already are. We think it is sensible of the IPO to collect views on the disclosure function for AI-orientated inventions. Yet, in light of these three reasons, we urge the IPO to exercise caution in invoking the disclosure function to support awarding patents to AI.

We now turn to the R&D investment function of patents. An important question the IPO will have to consider is whether granting inventions to AI is necessary to encourage R&D. One of the best ways to examine this question is to ask whether doing so would stimulate R&D that

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[1] E.g. Mark A Lemley, 'The Myth of the Sole Inventor' (2012) 110 *Michigan Law Review* 709, 745–9, c.f. William M Landes and Richard A Posner, *The Economic Structure of Intellectual Property* (Harvard University Press, 2003) 326–333.

[2] E.g. Adam B. Jaffe, Manuel Trajtenberg & Michael S. Fogarty, 'The Meaning of Patent Citations', in Adam B. Jaffe & Manuel Trajtenberg (eds) *Patents, Citations and Innovations: A Window on the Knowledge Economy* (2002) 390.

would *not* otherwise occur.[3] R&D that requires patent rights before it happens can be said to "require the patent inventive". On the other hand, granting patents on inventions that do *not* require the patent incentive is likely bad policy, as the exclusive rights can harm competition.

Our society is at a crossroads of granting patents rights to AI as an inventor. We do not currently grant patents to AI;[4] yet, the circumstances do pose an opportunity to explore whether we *should*. If the patent incentive is vital for some R&D, then organisations will be deciding to forgo some R&D. By the same token, if organisations are conducting their R&D irrespective of this issue, then this indicates that awarding patents to AI (as inventors) is unnecessary. We need evidence on this point before re-engineering the Patents Act 1977 (or other policy levers such as tax).[5] Question 4 in the Call for Views hints at this type of evidence, but we encourage the IPO to look for this evidence in a robust study.

One complication with the proposed study is the possible scenario that organisations are putting human names on patent applications that are solely invented by AI. This scenario could complicate the study because some of these inventions *might* have needed the patent incentive. Yet, the study would *not* capture this need because the organisations were able to (perhaps unlawfully) obtain a patent. The authors are unaware of any verified instances of organisations obtaining UK patents that they are not entitled to because the subject matter was invented by AI only;[6] but, the scenario remains a possibility. Fortunately, a well-designed study could account for this issue (and several others).

[3] This perspective was classically stated by Fritz Machlup, *An Economic Review of the Patent System* (1958) Study No. 15 of the US Senate Subcommittee on Patents, Trademarks, and Copyrights, 44.
[4] *Thaler* v *The Comptroller-General of Patents, Designs and Trade Marks* [2020] EWHC 2412 (Pat)
[5] If an extra incentive is needed, then the Government needs to consider whether amending patent law is the best option, or whether other policy changes (such as tax relief) would be best.
[6] In the USA, one patentee claims to have named himself the inventor of something invented solely by AI. See Ryan Abbott, 'I Think, Therefore I Invent: Creative Computers and the Future of Patent Law' (2016) 57 Boston College Law Review 1079, 1085. This concerns U.S. Patent No. 5,659,666 (filed Oct. 13, 1994) and U.S. Patent No. 5,852,815 (filed May 15, 1998).