Response of ACT | The App Association to the United Kingdom's Intellectual Property Office (IPO) Call for Views on Artificial Intelligence (AI) and Intellectual Property (IP)

30 November 2020

I. Introduction

ACT | The App Association (App Association) is pleased to provide the following contribution to the Intellectual Property Office (IPO) of the United Kingdom (UK) relating to the call for views on "Artificial Intelligence and Intellectual Property".

The App Association represents more than 5,000 small business software application development companies and technology firms across the mobile economy. Our members develop innovative applications and products that meet the demands of the rapid adoption of mobile technology and that improve workplace productivity, accelerate academic achievement, monitor health, and support the global digital economy. Our members play a critical role in developing new products across consumer and enterprise use cases, enabling the rise of the internet of things (IoT).

Today, the European app ecosystem alone is valued at approximately £167 billion and is responsible for over 1.3 million European jobs. The small business community that the App Association represents relies on IP to grow and create jobs. The infringement and theft of IP (copyrights, trademarks, patents, and trade secrets) presents a major threat to our members and the billions of consumers who rely on their digital products and services. The App Association urges the UK IPO to recognize that its approach to AI should prioritise both providing reasonable and technology-neutral protections as well as enabling AI tools to prevent and address IP infringement. App Association members are at the forefront of the development of AI across consumer and enterprise use cases. We have a strong interest in the policies that impact the development of AI solutions, including those in the context of IP. We recognise that the rise of AI holds great promise, yet also generates many legal and policy questions, and those around IP are no exception. Below, we discuss AI's impact on patents, copyrights, and trademarks and trade secrets, and urge that any AI-related changes to existing laws do not weaken important IP protections that are essential to small businesses in the digital economy. We commend the UK IPO for conducting this inquiry about AI as it pertains to IP rights and commit to assisting the IPO alongside other stakeholders to help develop balanced and practical solutions that will preserve international IP rights and further AI's role in society on a global scale.

The App Association offers the following responses to questions posed by the IPO.

II. Patents

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

As stated by the IPO, patents promise a return on investment in research and development, as well as the opportunity to invent further on top of a published patent. With the increased complexity of technology and products such as AI that may cover thousands of patents, a balanced and efficient patent system is also key for the UK's competitiveness and its global technology leadership. A fair and consistent intellectual property framework, including patents, is crucial to protect companies' investments, to help attract venture capital, establish and maintain a competitive position in the marketplace, and level the playing field dealing with established companies and competitors. This role of the patent system applies to the development and use of AI just as it does to other technologies.

Question 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 the AI is trained, claim inventorship?**
c. **Are there situations when a human inventor cannot be identified?**

The App Association places AI inventions into three overarching categories: (1) a primary AI invention; (2) an alternative application of an AI invention; and (3) inventions developed solely by AI. The App Association considers the first category to be the baseline AI invention, the second group contains applications of AI to additional contexts, and the final grouping is meant to demonstrate unpredictable outcomes produced by AI itself. We thus consider AI to be mostly a tool for human inventors to use.

A baseline AI invention is AI technology used to improve machine capability or work as an algorithmic method. These inventions can be delineated, declared, and evaluated in a way equivalent to software inventions.

An alternative application of an AI invention is machine learning (ML). ML occurs when a computer is taught to learn and react without direct instructions being programmed by design.[1] In contrast to an AI algorithm, machine learning uses data analysis to produce analytic or mathematic models that may not be in a format that is digestible for human beings.

The final category of AI is an invention solely developed by a machine and has no human involvement. A human inventor cannot directly be identified.

[1] See Machine Learning, DEEPAI, (last visited Feb. 13, 2020) https://deepai.org/machine-learning-glossary-and-terms/machine-learning(defining machine learning as teaching a computer how to learn and act without explicit programming).

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

For patentability purposes of inventions developed solely by AI, the App Association would not consider the machine as an inventor. Instead, the inventor would be the machine programmer. Machine programmers created the AI to resolve a human-defined issue that could not have been produced without human questioning. While this topic may need more thought in the distant future after further development of AI, we believe that this issue can be set aside during this request for comment period.

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

We do not believe that future inventions would be discouraged if AI cannot be credited as the inventor or that innovations developed using AI would be impacted by AI not being credited as the inventor.

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

At this time, the App Association does not believe there is a moral case to be made for recognising AI as an inventor in a patent. Permitting AI to be recognised as an inventor inherently recognises AI personhood, and such a determination should be made with this broader implication in mind and based on a robust and informed public debate, rather than in the context of patent inventions.

Question 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 IPO's examination should consider what an "inventor" is considered to be and what will be necessary to determine if an AI technology is patentable. AI inventions tend to be viewed as tools that can be utilized in a variety of applications. Individuals who contribute to the conception, training, or applications of the AI may all receive consideration as AI inventors. However, making the determination about the specific person who should hold the patent rights will be based on the facts surrounding the AI invention or application. The IPO should recognize these issues and carefully examine them in its AI-related efforts.

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

Baseline AI inventions can be delineated, declared, and evaluated in a way equivalent to software inventions. Therefore, no disputes arise with traditional methods of patent owners declaring and disclosing specific practices of their AI invention. Thus, the App Association

sees no new and significant challenges that arise with this type of AI invention and significant patentability requirements. We do not think this would discourage future invention being protected by patents.

However, there will always be AI patent invention use cases that will be more complicated due to the complexities that arise from AI machine learning (ML). The inability to demonstrate how the results of machine learning came about contributes to the confusion of how machine learning should be handled in the context of patent protections. AI patent evaluators may face greater obstacles when looking at claim and disclosure requirements. Despite this concern the App Association recognizes that if an AI patent applicant can (1) make use of and (2) show proof that they possessed the invention at the time of filing then the patent may still be granted.

Generally, applicants with complicated or complex AI inventions should seek alternative ways of describing their invention to meet relevant patent eligibility requirements. After producing an AI invention there may be multiple applications of the AI within the sector. Inventors may find alternative uses to solve a different problem or to build from the AI to create a different invention. As such, technological advancements using AI applications should be evaluated for their patentable characteristics and purpose as opposed to the recognizing a former AI invention claim. The App Association is confident that existing laws can address these patent applications with AI components due to past experience with computers and the internet having many additional applications, and we urge the IPO to ensure that such an assessment is made, with conclusions based on concrete foundations (as opposed to edge use cases).

Further, the UK Supreme Court recently issued a ruling in *Unwired Planet v. Huawei*, holding that a standard-essential patent (SEP) holder's insistence on only agreeing to a worldwide license is consistent with its FRAND obligation. If a single patent in a single jurisdiction can be used to obtain an injunction unless the alleged infringer enters into a worldwide license, SEP owners will be highly incentivized to engage in global forum shopping. This unprecedented decision distorts the competitive process by allowing SEP owners to obtain royalties above the value of their underlying portfolio. The ruling also interferes with the sovereignty of countries that have passed laws requiring different substantive or procedural rules for proving patent infringement, obtaining product injunctions, demonstrating invalidity, or calculating monetary damages. The negative impacts of this decision are further beginning to cause other key jurisdictions, such as China, to consider making similar assertions, giving rise to legal comity issues. We strongly encourage the IPO to recognize that UK law and policy should be updated to rectify the harmful effects of the *Unwired Planet* decision, which poses a threat to innovation in AI and for UK leadership generally.

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

The IPO should consider a variety of elements when evaluating and determining an AI invention's patent eligibility. Elements that deserve consideration during the patentability process include (1) the data that will train the AI; (2) the algorithm; (3) the method of training the algorithm; and (4) the outputs produced from the AI application. The IPO should

use the existing requirements for software patentability as a starting point to identify necessary elements of patentable AI inventions and applications.

III. Copyright and related rights

Question 2: Is there a need for greater clarity about who is liable when AI infringes copyright?

The App Association believes that precedent may need to evolve to address scenarios where an AI process creates a work that infringes a copyrighted work. We do not believe this is a shortcoming of copyright law, but instead a result of rapidly evolving technology and disputes that arise may be decided through future law and policy decisions. However, should case law demonstrate that there is a need for revisions to liability provisions, the App Association would support such an effort to ensure the fair application of copyright to emerging use cases that involve AI.

Question 3: Is there a need to clarify existing exceptions, to create new ones, or to promote licensing, in order to support the use of copyright works by AI systems? Please provide any evidence to justify this.

We recognize that some courts have held that authorship may extend to the output of AI algorithms where the AI algorithm itself is copyrightable and where the algorithm is primarily responsible for the output (i.e., the downstream user of the AI algorithm that is not its author has a very marginal role). For example, the United States Court of Appeals for the Ninth Circuit has recognized that copyright protections may be extended to a computer program's output if the program "does the lion's share of the work" in creating the output and the user's role is so "marginal" that the output reflects the program's contents.[2]

With respect to a person choosing data used by the algorithm, the App Association believes that such a scenario may be sufficient to qualify for copyright protection when meeting the thresholds for copyrighting a data selection within a compilation, which is enabled by some copyright laws (notably, requiring creativity in the data selection).[3]

When evaluating a natural person "causing" the AI algorithm or process used to yield the work, the App Association does not believe such an activity should necessarily create copyrightable author rights. Such an allowance would allow a party "causing" the algorithm to "yield work" through simply enacting another author's algorithm to claim authorship.

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[2] E.g., Rearden LLC v. Walt Disney Co., 293 F. Supp. 3d 963 (N.D. Cal. 2018).

[3] E.g.,17 U.S.C. § 101. ("[A] work formed by the collection and assembling of preexisting materials or of data that are selected, coordinated, or arranged in such a way that the resulting work as a whole constitutes an original work of authorship. The term ''compilation'' includes collective works.

The App Association believes that precedent may also need to evolve to address scenarios where an AI algorithm or process learns its function(s) by ingesting large volumes of copyrighted material, including with respect to infringement and fair use. This is simply an effect of quickly evolving technology and controversies arising that can resolve in new law and policy decisions within the IPO. However, changes to international and national copyright law should not weaken critical copyright protections.

Question 4: Is there a need to provide additional protection for copyright or database owners whose works are used by AI systems? Please provide any evidence to justify this.

While some areas of copyright are cleanly applied to AI-related scenarios (e.g., copyright protections of an AI algorithm), others may require further study and development of precedent (e.g., AI output depending on a range of factors). Because databases and data sets may enjoy copyright protections as compilations, it is likely that existing laws adequately protect them. However, the law is less clear with respect to AI-generated works (including compilations). The App Association believes that case law and policy may need to evolve to address these scenarios. This is not due to an inadequacy of the law, but instead the extremely fast paced and constantly changing environment of technology. Instead, we believe that conflicts that arise may be resolved through case law and policy implementations. However, if these legal and policy decisions demonstrate that there is a need to update or amend copyright protections, the App Association would support efforts to ensure equitable applications of copyright protections in the emerging AI context.

Question 5: Should content generated by AI be eligible for protection by copyright or related rights?

The App Association believes that further consultations and study are needed to answer this question. Inevitably, a natural person must be responsible for a work for it to qualify as a work of authorship protectable under copyright law, which is reflected in existing international law and policy. For example, the U.S. Court of Appeals has held that only humans (as opposed to, in the case, animals) have standing to sue for copyright infringement.[4] Further, UK copyright law provides that it will register an original work of authorship, provided that the work was created by a British citizen or an individual resident of the UK. The Court of Justice of the European Union has stated that copyright only subsists in subject matters that are original in the sense that it is the author's own 'intellectual creation'.[5] Any decision to provide copyrightable work authorship to AI may therefore represent a drastic shift in law and policy and would also lend to defining legal AI personhood (a question that should likely be addressed by legislators comprehensively).

[4] Naruto v. Slater, 818 F.3d 418, 426 (9th Cir. 2018).

[5] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/481194/c-notice-201401.pdf

IV. Trademarks

Question 2: Are there, or could there be, any difficulties with applying the existing legal concepts in trademark law to AI technology?

We note that AI enables improved trademark searching and registrations and that AI tools are also widely used to detect trademark infringement online. However, we do not believe that AI has had a direct impact on trademark law yet and that alterations to address the use of AI are not necessary at this time. However, we urge the IPO to continue to monitor this area to determine if issues with respect to AI and copyright (e.g., ownership of an AI-generated work) also emerge in the trademark space. Should any changes to trademark law be considered in light of AI, it is important that trademark rights are not weakened.

V. Trade Secrets

Question 1: Is trade secret protection important for the AI sector? Does the nature of AI technologies and business influence your answer?

Yes, trade secret protections are important for the AI sector, and may be particularly crucial when an algorithm may itself represent the trade secret. This said, AI is simply a new kind of technology which should enjoy the same protections UK trade secret protection provides to other technologies. Should changes to the trade secret protections be considered, it is important that trade secret protections are not weakened. The App Association does not believe that changes in law, policy, or practices are needed to ensure an appropriate balance between maintaining trade secrets and obtaining IP protections related to AI.

Question 2: Does the nature of AI pose any problems if UK trade secret protection is required? Does UK trade secret law give adequate protection to aspects of AI technology where no other intellectual property rights are available?

The App Association does not believe the existence of AI poses any problems with respect to UK trade secret law. AI is simply a new kind of technology which should enjoy the same protections UK trade secret protection provides to other technologies. However, should changes to the trade secret protections be considered, it is important that trade secret protections are not weakened. The App Association does not believe that changes in law, policy, or practices are needed to ensure an appropriate balance between maintaining trade secrets and obtaining IP protections related to AI.

VI. Conclusion

The App Association notes that several individual countries' agencies, such as the United States Patent and Trademark Office (USPTO), as well as international organizations like the

World Intellectual Property Organization (WIPO) are in the initial stages of assessing AI's impact on IP. The App Association encourages coordination with these agencies and the UK IPO's multilateral efforts. The App Association appreciates the opportunity to submit these comments to the IPO, and we are committed to working with all stakeholders to address emerging technology issues and developments affecting IP. We remain at your disposal should you have further questions.

Sincerely,

[redacted]

ACT | The App Association
Rue de Trèves 45
1040 Brussels
Belgium