Getting ready for a world of AI-generated inventions

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Back to Intellectual Property Law...

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- The starting point for a policy discussion is arguably the status quo.

- This involves examining whether the existing patent laws of a given jurisdiction allow AI to be named as an inventor.

  - Do a jurisdiction's existing patent laws allow an AI system to be named as an inventor or is a human inventor is required?

  - Does the status quo encourage the desired policy incentives?

Can an AI system be named as an inventor? Is a human inventor required?

- Courts around the world have required human inventors in the DABUS cases

- Legislative bodies could change the requirements and allow an AI system to be named as an inventor

Does the status quo encourage the desired policy incentives?

- What are the desired policy incentives?

  - Economic purpose of patents

  - Social benefits of patents

  - What are the goals that policy-makers would want to achieve by introducing intellectual property protection for AI-generated inventions?

Options

1. Preserve the status quo and continue to recognize human inventors only.

2. Revise patent laws to allow an AI system to be named as an inventor or co-inventor.

3. Revise patent laws to require a legal person to be named as a proxy for the AI (co-)inventor, while recording the inventive contribution of an AI system.

4. Establish a *sui generis* IP law for AI-generated inventions.

1. Recognize human inventors only

- So far, court decisions from around the world have found that "inventor" means a *human* inventor under existing laws.

- Therefore, AI-generated inventions are currently excluded from patentability in many jurisdictions.

- This conclusion is based on statutory interpretations of patent laws and provisions that were put in place well before the advent of AI , when the idea of a non-human inventor was in the realm of science fiction.

- would it be beneficial to maintain this status quo or amend patent laws to reflect the changing environment in which inventiveness is now occurring?

- Limiting patents to human inventors aligns with justifications for patent laws:
    - patent law was developed to incentivize and reward human innovation only.
    - AI systems do not need to be rewarded for their efforts.
    - AI-generated inventions may render many human-made innovations "obvious" or lacking an "inventive step," and therefore unpatentable.
    - the ability of AI systems to systematically identify knowledge gaps and invent accordingly could narrow the scope for invention by others.
- Limiting patents to human inventors makes sense pragmatically:
    - would the patent system remain workable if AI-generated inventions were to be patentable?
    - who would own a patent if an AI system were to be recognized as an "inventor" for patent purposes, but that system did not have legal personhood and could therefore not own property. Who would be responsible for the patent application? And who could enforce the patent?
    - Could patent authorities cope with potentially vast quantities of patent applications for AI-generated inventions?

2. Revise patent laws to allow an AI system to be named as a sole or co-inventor

- Why?
  - focus on the importance of the invention rather than whether it has been invented by a human or an AI system.

- How?
  - remove any requirement stating that a pre-condition for patentability is that an inventor is human.

- Benefits:
  - this could encourage investment in AI-related R&D and lead to an increase in AI-generated technological innovations.
  - it could stimulate economic growth and produce the same sorts of social benefits generated by patents protecting human-generated inventions.
  - the disclosure function would encourage the sharing of technical specifications for AI-generated inventions, promoting transparency and the dissemination of knowledge that might otherwise remain secret.

- But, if AI-generated inventions were to be patentable, who would be the owner of the patent?
  - Patent ownership currently flows from the inventor(s).
- Solution?
  - acknowledge the various contributors to the inventive process.
  - Options:
    - afford sole or co-ownership to the person(s) (human or corporate) who trained and developed the AI system, or that owned or operated the AI system when it generated the invention.
    - reward with either sole or co-ownership the legal person(s) whose intellectual, technical or financial support was integral to the creation of the invention.
  - Concerns:
    - would necessitate a substantial revision of legal principles and major legislative changes.
    - could introduce new legal uncertainties
    - there could also be other repercussions.

3. Revise patent laws: require a named person & record inventive contribution of an AI system

- adapt the existing patent system to accommodate AI-generated inventions

- change the requirement that a human inventor be named to a requirement that a human also be named, or that a legal person be named as the sponsor for all patents claiming AI-generated inventions.

- Benefits:
  - solve the issue of accountability for a patent (application).
  - minimize the risk that a fabricated human inventor might be named to conceal the AI-generated nature of an invention.

- But not without risks.

4. Establish a *sui generis* law for AI-generated inventions

- create a new type of *sui generis* intellectual property to protect AI-generated inventions.

- Benefits:

  - it could be tailored specifically to reflect the inventive processes used by AI systems. The rules for inventorship, ownership and other challenges to patent law could be adapted or reimagined to suit AI-generated inventions.

  - It would not be constrained by established concepts; it could incorporate features from other areas of IP law.

  - New ethical principles could also be built into a *sui generis* IP law.

- But:
  - Some would be opposed to extending IP protection to AI-generated outputs altogether.
  - Others would fear that awarding IP protection to AI-generated innovations could lead to a handful of powerful entities monopolizing access to AI-generated technologies and their innovative output.
  - It would be important to design and coordinate provisions to prevent overlap or conflict between a *sui generis* AI-IP law and existing patent law.
  - it would be essential for policymakers to consider the diverse views of all stakeholders when drafting a *sui generis* law to provide IP protection for AI-generated inventions.
  - Whether or not such a law would also extend protection to AI-assisted inventions would be a decision that lawmakers in a particular jurisdiction could make after weighing all the options.

Possible ripple effects

- Each option carries advantages and drawbacks, and any action taken – or not taken – could result in unintended negative consequences.

- policymakers should carefully consider the various options before deciding if, and how, to extend IP protection to AI-generated and AI-assisted inventions within their jurisdictions.

- be mindful of the possible repercussions that could arise in their respective jurisdictional contexts.

- Being aware of these potential "ripple effects" is essential to avoid unintended consequences.

Possible actions for policymakers to prepare for AI-generated inventions

- Existing IP laws define the current status quo.

- trying to shoehorn AI-generated inventions into prevailing legal definitions seems unlikely to provide lawmakers with the best approach for designing the innovation ecosystem to achieve their policy goals for the future.

- It may be helpful to consider a spectrum or mixture of options.

- In weighing up options for protecting AI-generated inventions: the justifications for IP laws generally, and policy goals in relation to AI, should ideally be considered in the context of the entire IP system and its socioeconomic environment in a jurisdiction.

- hold an inquiry aiming to build a detailed understanding of the needs and desired outcomes of various stakeholders in the jurisdiction

- analyze options carefully, and make recommendations to start shaping legal solutions that are consistent with the fundamental purpose of the patent system, and that work in harmony with other areas of IP law.

Conclusion:

While it is essential to proceed with caution throughout this process, the rapid pace at which AI technologies are evolving suggests it will be vital to carry out the task both promptly and swiftly