

# To Be or Not to Be. Who Can Be an Inventor?

**Helen Macpherson** (Baker McKenzie Sydney), **Tanvi Shah** (Baker McKenzie, London) and **Avi Toltzis** (Baker McKenzie, Chicago) discuss the Thaler litigation, and the questions it raises about the recognition of AI as an inventor under patent law.

As we all know, digital technologies have infiltrated and transformed all facets of industry and commerce, leading to the creation and use of tech-based IP across both traditional and non-traditional tech sectors.

Digital technologies come in many different forms including blockchain, cloud computing, artificial intelligence (AI), data analytics and the Internet of Things (IoT) (or what used to be called wireless sensor networks). The digital technologies available to us today and in the future are at the forefront of innovation. As a result, they are pushing the boundaries of IP laws, giving rise to novel issues impacting IP strategies including what types of IP are best placed to protect and monetise digital technologies, how you frame these rights (for example what you patent and how you draft your patents) and how to enforce your IP rights. A key issue for digital technologies that facilitate new modes of creation is that of who or what can be legally recognised as the creator or inventor of such technologies. This is a fundamental issue for many digital technologies, and none more so than AI, in which there is minimal human input.

Last year, the Federal Court of Australia became the first court worldwide to recognise AI as being capable of being an "inventor" of a patent. That decision of a single judge of the Federal Court of Australia has now been overturned by a unanimous decision of the Full Federal Court (see Commissioner of Patents v Thaler [2022] FCAFC 62). In this article, we explain the technology the subject of the decision and provide an overview of the Full Court's rationale for overturning the single judge's decision. We then provide a global perspective, considering the counterpart decisions in the United Kingdom, the United States and the European Union.

# The technology: DABUS

Dr Stephen Thaler, a Missouri-based engineer, filed patent applications in various patent offices around the world for inventions relating to food and beverage containers and methods for attracting enhanced attention. In each of the patent applications, Dr Thaler identified an AI system he created called DABUS (an acronym for "device for the autonomous bootstrapping of unified sentience") as the sole inventor.

Dr Thaler argued that DABUS, which he characterised as a "creativity machine", was programmed as a series of neural networks and was not created to solve any particular problem nor trained on any data especially relevant to the inventions. Rather, DABUS independently conceived of the invention, and on this basis, Dr Thaler argued that DABUS, not any human, was the true inventor.

# **The Australian Position**

So what was the Australian Full Court's rationale for overturning the single judge's decision? Ultimately, it all came down to statutory interpretation, which is primarily a textbased exercise but which can be informed to a certain extent by policy considerations. In the Full Court's view, the use of the word "person" in the key statutory provision (section 15 of the Australian Patents Act 1990 (**Patents Act**) which addresses the issue of who may be granted a patent) meant a "natural person". The Full Court considered that no other provision in the Patents Act was inconsistent with this interpretation of section 15, and that this interpretation was consistent with centuries of patent law which had proceeded on the assumption that only a natural person could be an inventor. In discussing the latter point, the Full Court referenced the High Court of Australia's decision in *D'Arcy v Myriad Genetics Inc* (2015) CLR 334 where the majority stated that an invention is something which must be brought about by human action.

The Full Court recognised that the debate as to the role of AI in the patent context was "important and worthwhile", but stated that these considerations were not relevant in the present case which required consideration of the interpretation of the relevant statutory provisions. In this regard, the Full Court cautioned against approaching the task of statutory interpretation by reference to what might be regarded as desirable policy, imputing that policy to the legislation, and then characterising that as the purpose of the legislation. The Full Court also did not consider that, if AI was not accepted to be an inventor, no invention devised by AI would be capable of being the subject of a granted patent. While in the present case it was an agreed fact that the AI system was the inventor of the invention the subject of the patent application, the characterisation of a person as an inventor is a question of law. The question of whether the application that was the subject of this appeal had a human inventor had not been explored and so remained undecided.

# **The Global Perspective**

The Full Court's decision brings Australia into line with that of other major jurisdictions such as the UK, US and EU where Dr Thaler also applied for patents with DABUS designated as the inventor.

## The United Kingdom

In September 2021, the UK Court of Appeal dismissed the appeal seeking to overturn the first instance court's decision that the UK Intellectual Property Office (**IPO**) was correct to regard Dr Thaler's applications as withdrawn for his failure to identify a natural person as the inventor of the patent in accordance with sections 7 and 13 of the UK Patents Act 1977. LJ Arnold (joined by Lady Justice Laing, writing separately) ruled that the UK IPO was entitled to deem the application withdrawn as a result of Dr Thaler's designation of DABUS as the inventor. LJ Birss concurred that an AI system could not be the inventor of a patent but concluded that the UK IPO was not empowered to deem an application withdrawn on the basis that the applicant had named an AI system as the inventor.

So, while all three judges on the panel agreed that the inventor of a patent must be a natural person, LJ Birss dissented from his peers on the legal effect of an applicant



identifying an AI system as the inventor on a patent application under section 13(2). Under this subsection, the applicant must name the person they "believe[] to be the inventor" and indicate "the derivation of [the applicant's] right to be granted the patent" if the applicant is someone other than the inventor. LJ Birss found that Dr Thaler, in naming DABUS as the inventor and explaining how he programmed, owned, and operated DABUS, had complied with section 13(2) because he sincerely believed DABUS to be the inventor of the patent. Accordingly, Dr Thaler's designation of DABUS as the inventor did not constitute grounds for the UK IPO to refuse the patent, even though LJ Birss accepted that section 7 required the inventor of a patent to be a natural person.

LJ Arnold, while agreeing with LJ Birss that it was outside the remit of the UK IPO to investigate the factual correctness of statements of inventorship, rejected the notion that section 13(2) merely required an earnest declaration of who the applicant believed was the inventor. Because Dr Thaler's statement that DABUS invented the patent was, on its face, legally impossible, it could not comply with section 13(2). Accordingly, LJ Arnold (and by agreement LJ Laing) concluded that Dr Thaler, by his failure to identify a legally plausible inventor of the patent, caused the application to be withdrawn.

Notably, the conclusion that an inventor must be a natural person was arrived at "without any need to examine the policy arguments raised by both parties." and, as stressed by LJ Birss, the case simply turned on "the correct way to process patent applications through the Patent Office" and not on any larger questions around the patentability of AI-created inventions.

#### **The United States**

A few weeks before the UK Court of Appeal's decision, the District Court for the Eastern District of Virginia became the first US court to consider whether AI can be named as the inventor of a patent.

Judge Leonie Brinkema disposed of the appeal summarily by finding that the US Patent and Trademark Office (**USPTO**) should be afforded Skidmore deference, which accords an agency latitude to determine how to administer its statutory duties, as long as its position is reasonable in light of the relevant statute.

While Judge Brinkema concluded that the application of Skidmore deference was dispositive of Dr Thaler's claim, she nonetheless proceeded to analyse, and ultimately endorse the USPTO's legal conclusions. At the outset Judge Brinkema observed that the *America Invents Act of 2011* amended the definition of "inventor" in the section 100(f) of the Patent Act to mean "the individual...who invented or discovered the subject matter of the invention." Judge Brinkema then cited a recent Supreme Court decision that interpreted the term "individual" (as used in the *Torture Victim Protection Act*) to refer exclusively to a natural person.

She also examined how the term "individual" was used in the context of the Patent Act and found that it could only be consistent with the construction limited to human beings. For example, under section 115(b)(2), the inventor was to include a statement that he or she believes himself or herself to be the original inventor, a phrase rendered meaningless if applied to a being incapable of belief like an AI. As the conventions of statutory construction presumed a term to have a consistent meaning throughout a statute, the term "individual" was held to have the same meaning in other Patent Act provisions.

Judge Brinkema then turned to a pair of recent Federal Circuit decisions interpreting the Patent Act and holding that inventors must be natural persons. Although these decisions examined the contention that a sovereign state or a corporation, respectively, could constitute an inventor, they corroborated Judge Brinkema's other findings and were considered highly persuasive.

Having concluded that the text of the Patent Act, along with cases interpreting it and similar language, supported a limited definition of inventor, Judge Brinkema concluded her judgment giving short shrift to Dr Thaler's policy arguments. Without assessing the merits of the policy arguments themselves — that conferring inventorship on AI systems would "incentivize the development of AI capable of producing patentable output" — she conceded that such contentions could not prevail in the face of the statute's plain language.

## **European Patent Office**

The Receiving Section of the European Patent Office (**EPO**) has also recently refused Dr Thaler's patent application. It did so for two reasons. First, it concluded that only a human inventor could be an inventor within the meaning of the European Patent Convention (**EPC**). For this reason, designating a machine as inventor did not comply with the requirements set out in Article 81 and Rule 19(1) of the EPC. Secondly, the Receiving Section was of the opinion that a machine could not transfer any rights to the applicant. The Receiving Section considered therefore that the statement that the applicant was successor in title because they owned the machine did not satisfy the requirements of Article 81 EPC in conjunction with Article 60(1) EPC.

The appeal of the refusal by the Receiving Division of the EPO was heard by the EPO's Technical Board of Appeal in December 2021. The Technical Board dismissed the appeal, but their written reasons are yet to be published.

## **Conclusion: AI as an inventor**

So you can see that in these recent decisions, courts and patent offices worldwide have grappled with the question of whether a patent application can name an AI system as its inventor. The decisions to date share a common feature: careful examination of the text of the governing statutes and conventions, resulting in conclusions that rendered assessment of the underlying policy considerations unnecessary. However, this is not yet the end of the road for Dr Thaler who has made a special leave application to the High Court of Australia and applied for permission to appeal to the UK Supreme Court, as well as appealing to the US Federal Circuit.

Relevantly, important questions remain unanswered when it comes to patents-based on AI technology. The Australian Full Court concluded their judgment by briefly listing some of the many questions that arise for consideration in the context of AI and inventions. These questions included:

• As a matter of policy, should a person who is an inventor be redefined to include AI?

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