

The fuel behind the AI revolution: Marks & Clerk's annual AI Report reveals unprecedented growth in AI patent applications

This year, AI has dominated headlines. Generative AI, such as deepfakes and ChatGPT, has caused excitement and controversy in equal measure as society wrestles with both its potential as well as the legal and ethical questions it raises. As a leader in the space, Marks & Clerk has been at the forefront of the European Patent Office's (EPO's) engagement with the patent profession as they try to bring some legal certainty and consistency to examining AI patent applications across this rapidly evolving landscape.

Growing public attention is mirrored by strong growth in AI patent filings with the number of AI patent publications at the EPO increasing by around 17% between 2021 and 2022, according to our annual *AI Report*. It also reveals that practical applications of AI are an increasing focus for industry, demonstrating significant investment that reflects AI's growing impact on the global economy. As AI's usefulness increases, it is clear that companies are eager to protect their innovations in this area.

Whilst it's too early to see the effects of the very latest AI developments in the data, it seems clear that patent applications will continue to rise. As the number of applications continue to increase, lawmakers' efforts to balance legal and ethical considerations will also rise, which will make some firms uneasy about how they can protect their interests while leveraging these new technologies.

The report shows that with the right expertise, companies can protect their AI innovations, while exploring some of the most common concerns arising from the assimilation of generative AI into businesses, which is broken down in the following:

The data quality dilemma

Both regulators and commentators have raised concerns about the data which fuels Large Language Models (LLM) and how it can lead to bias outputs. Generative AI is also prone to 'hallucinations', whereby the text it generates is factually incorrect.

To minimise this risk, firms need to take time to consider how and when they should be using LLM programs, and that they are making sure the information they feed to them is factually correct and complete.

Copyright concerns

To further fuel their outputs, generative AI programs have likely been trawling through and leveraging third-party proprietary materials. The scale and sophistication of this activity makes it hard for firms to keep track of what has and hasn't been used and has given rise to a number of cases alleging unauthorised use:

As part of this, it's likely that personal data may also have been used, meaning firms could be exposed to privacy claims as well as copyright infringements. We have already seen the perils of deepfake pictures and film footage play out across the media, and the impact this has had on those whose images have

been used.

Part of the solution here appears to be regulation, with regulators around the world seeking ways to ensure that they can protect privacy without stifling innovation. In the EU for example, the draft EU AI Act anticipates that the use of all third-party material be disclosed, including sources, which would be cumbersome for AI users across the continent.

Invention and ownership

One of the most heated debates in the industry is whether AI can be deemed an 'inventor', and consequently, if solely AI-generated works can be patented or have copyright protection. To date, the stance from most jurisdictions has been that human input is required for copyright or patentability to arise, leaving AI-generated works unprotected.

It remains to be seen whether this approach will continue, however any protection is better than no protection, so firms should seek to protect what they can. For example, in the US we have seen a series of partial copyright registrations, with human-generated elements to a creative work being granted protection and AI-generated ones being denied it.

At least one thing is undisputed: generative AI is set to continue generating controversy. But at its crux is yet another example of law and regulation being outstripped by technological progress. A way forward will emerge once the dust has settled, but it seems like a region-to-region approach is most likely. This means firms will need to spend time and get the right expertise to ensure they have the necessary protections in place in every continent.

The impact of AI regulation on patent filing trends is worth exploring. The drafted EU AI Act could pose a significant burden to AI development in the EU – similar to the issues posed by GDPR – which could create divergence between countries if other jurisdictions apply a softer-touch approach to regulation.

Given the 18-month delay between patent filing and publication, the recent surge in generative AI is not yet reflected in the current patent data. But given the disruption caused by the widespread uptake of Large Language Models (LLMs), it will be interesting to see whether this has an effect in next year's data.

This is Marks & Clerk's third annual AI Report, which aims to provide answers to industry questions before they have even been asked – as reflected in the decision to include a specific chapter focused on the med-tech sector's burgeoning utilisation of AI technologies as well as double down on the impact of Generative AI. Marks & Clerk is a world-leader in AI and how firms can

protect its use. And between 2015 and 2022, Marks & Clerk filed more patent applications for AI inventions than any other firm and has a market leading allowance rate – of the AI applications closed in 2022, Marks & Clerk had a 66% allowance rate, compared to an average of 53%. 7.8%.

About Marks & Clerk

Marks & Clerk is the largest firm of intellectual property advisers in the UK and is recognised as one of the world's leading IP firms. Its patent and trade mark attorneys offer a full range of intellectual property services – covering patents, trade marks, designs and copyright – for clients ranging from SMEs and spinouts to universities and multinationals.

The firm's patent attorneys all have scientific or engineering backgrounds whilst its trade mark attorneys advise on all areas of brand protection. Services include: obtaining patent and trade mark protection worldwide; portfolio management; IP strategy and commercialisation; licensing; enforcement; and due diligence. With a network of 18 offices across the UK (nine locations), continental Europe, North America and Asia, and long-established relationships with other leading IP firms worldwide, the firm is able to assist innovators to protect and maximise the value of their intellectual assets on a local and global basis.

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