Artificial intelligence for the IP legal profession

Practical approaches for harnessing the potential of AI

Clarivate™

Future-proof your IP practice with AI

AI-assisted IP solutions for IP creation, maintenance and protection.

Artificial intelligence (AI) is key to future-proofing intellectual property (IP) practice. However, unlocking this powerful technology requires an experienced partner who understands the technical and ethical considerations of building AI-enhanced tools for the IP practice.

This white paper explores the real-world applications of AI in IP legal practice, highlighting the proven benefits, such as improved productivity, efficiency and empowered decision-making across IP processes.

- **Patent creation and protection:** Enhancing patent drafting, searching and monitoring.

- **Trademark research and protection:** Assessing infringement risks and protecting brands.

- **Automation and routine task management:** Simplifying administrative tasks to save time and provide quick answers.

We also address the technical and ethical considerations of developing and deploying AI solutions. This includes the importance of quality data, expert oversight and responsibility to ensure the transparency, security and accuracy of AI tools.

AI is no longer the future; it is here today. Understanding how AI improves IP practices will help corporate and law firm IP teams integrate it into their workflows effectively. Clarivate offers AI-assisted tools that enhance IP professionals' efficiency and effectiveness, providing a practical way to leverage this technology while managing risks.

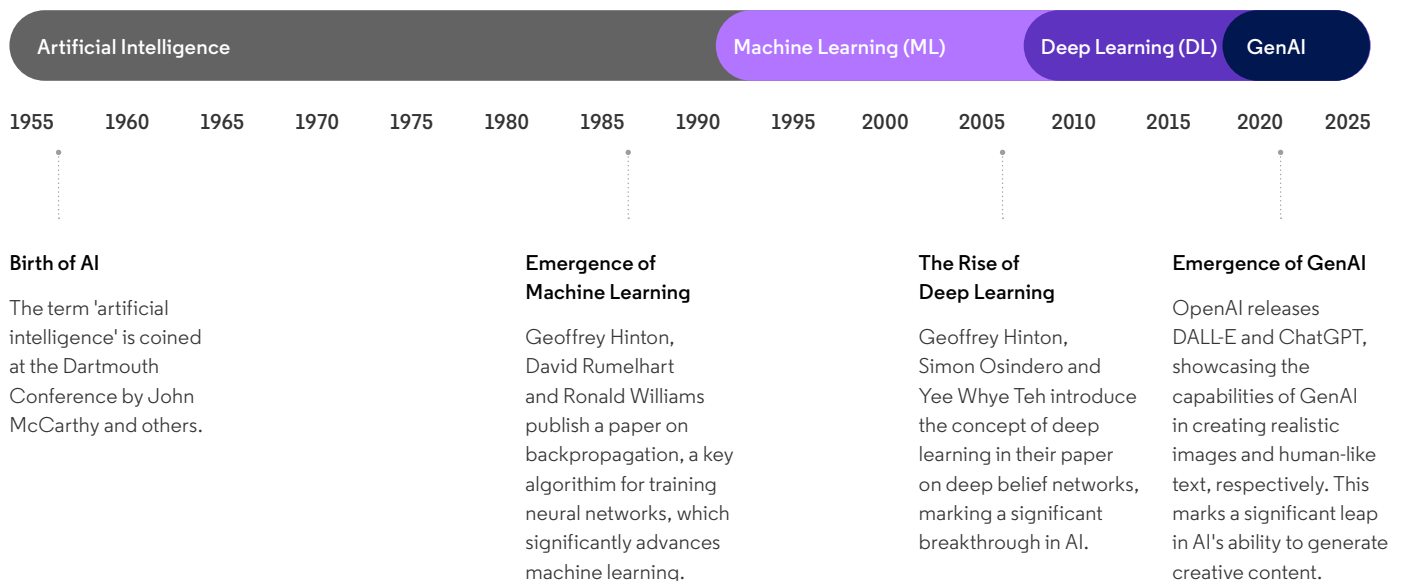# Contents

Introduction

80%

of law firm leaders see applications for AI in legal work.

The impact of AI on the IP and legal professions is a hotly debated topic. Some professionals see AI as a powerful tool that enhances their ability to generate value, while others are concerned about its potential to encroach on a practice traditionally reliant on human expertise. Since IP professionals are at the forefront of managing corporate risk, there is an added pressure to implement AI responsibly, ensuring it enhances operations without compromising data privacy or IP rights.

AI is not a new technology; it has evolved significantly since the late 1950s. Today, generative AI (GenAI), which uses advanced neural networks and massive data sets to create new content and perform sophisticated decision-making, is at the forefront of the broader AI landscape. Tools like ChatGPT and DeepAI are early examples of commercially available GenAI.

AI is seen as both a competitive advantage and a necessity in the IP sector. A recent survey revealed that 80% of law firm leaders[1] believe there are applications for AI in legal work. However, questions remain about its use — from data accuracy and privacy to information risk and technological deployment.

This paper draws on insights and deep expertise from across the Clarivate ecosystem to explore the role of AI in IP practice. We focus on practical use cases that demonstrate how AI can help IP professionals today, balancing the opportunities and risks of new applications.

| Artificial Intelligence | | | | | | | | | Machine Learning (ML) | | Deep Learning (DL) | GenAI |

| 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 |

Birth of AI

The term 'artificial intelligence' is coined at the Dartmouth Conference by John McCarthy and others.

Emergence of Machine Learning

Geoffrey Hinton, David Rumelhart and Ronald Williams publish a paper on backpropagation, a key algorithim for training neural networks, which significantly advances machine learning.

The Rise of Deep Learning

Geoffrey Hinton, Simon Osindero and Yee Whye Teh introduce the concept of deep learning in their paper on deep belief networks, marking a significant breakthrough in AI.

Emergence of GenAI

OpenAI releases DALL-E and ChatGPT, showcasing the capabilities of GenAI in creating realistic images and human-like text, respectively. This marks a significant leap in AI's ability to generate creative content.

1 "Generative AI in law firms: For many, such technologies are still a great unknown", Zach Warren. Thomson Reuters, 2023.

Evolving the work:
The benefits of AI

AI is increasingly considered a necessary evolution for practitioners seeking to optimize decision-making and automate specific IP operations. However, it is important to note that despite often sensational headlines, AI is better described as a capability rather than a standalone product or solution. Its immediate power is enhancing the products and services that professionals use daily. For corporate and law firm IP departments, AI offers some very attractive benefits:

- **Speed and efficiency:** Quickly extract insights from millions of patent or trademark records.

- **Cost savings:** Automate manual processes and reduce the need to focus on time-consuming, repetitive tasks, freeing up resources for strategic work. Using AI to handle non-billable administrative tasks for law firms can also help maximize profitability.

- **Accuracy and consistency:** Minimize human error with AI-assisted solutions trained on large volumes of high-quality industry data.

- **Proactive management:** Enhance portfolio decision-making with predictive capabilities.

While specific capabilities vary depending on the AI technology — the benefits can be tremendous. According to an IDC global study[2], companies see an average return of $3.5 USD for every dollar invested in AI, with some achieving returns of $8 USD. Most organizations realize these benefits within 14 months of deployment. As AI becomes even more broadly integrated into day-to-day processes, early adopters in the IP space will likely use it to secure a competitive advantage.

2 The Business Opportunity of AI. IDC, Nov, 2023

Bridging the gap:
Technical and ethical considerations

"There's a saying that goes 'without human expertise AI is just artificial'."

Vasheharan Kanesarajah, Clarivate Vice President, Corporate Strategy, IP

While AI offers significant benefits, its adoption in IP workflows requires consideration of critical technical and ethical factors.

Data quality: High-quality, comprehensive data sets are essential for reliable AI analyses. This involves carefully selecting and curating billions of data points to ensure accuracy and relevance. Relying only on AI trained on open-source data can result in biased and less reliable results.

Expert oversight: The reliability of AI depends on the involvement of IP experts working alongside data scientists. Human expertise is crucial to validate and guide AI outputs.

Seamless integration: AI tools should integrate smoothly with existing IP solutions and workflows. Ensuring easy adoption and a seamless user experience.

Scalability: AI solutions must be designed to handle varying volumes of data and tasks. Achieving this scalability requires adequate volumes of clean, structured data and access to experts to train the models.

Transparency and explainability: To build trust in any AI tool, it must be explainable and not operate as a 'black box' with its underlying methodology obscured. Vendors should be transparent about how AI models generate results.

Security: Protecting data used by AI is vital, especially sensitive IP information. Robust security measures aligned with international security and privacy standards and evolving regulatory frameworks must be in place to safeguard these assets. Vendors should be able to tell you exactly how they're using your inputs, whether they're contained, how they're stored and how you can permanently delete them.

Bias and hallucination: AI models can be influenced by bias and produce incorrect information (hallucinations). Rigorous training, continuous monitoring and human oversight are necessary to minimize these risks.

Responsible AI development combines deep expertise from data scientists, subject matter experts, IP practitioners, content specialists and technology teams. This collaborative approach, combined with large volumes of clean, interconnected and curated data, helps to ensure accuracy, minimizes risk and delivers reliable results.

Discover the path: Practical use cases

While the potential future applications of AI to business processes are nearly limitless, three key use case categories are already available to corporate and law firm IP professionals.

01
Patent creation and protection

AI enhances productivity and provides valuable commercial insights across various patent-related tasks:

Patent drafting and prosecution

Through AI-enhanced solutions, patent professionals can automate tedious tasks like claim formatting, reference numbering and term consistency. Plus, attorneys can generate responses to Office actions using AI tools. This allows practitioners to focus on higher-value tasks like the content of the response to examiner rejections.

Patent searching

With millions of patents published worldwide, searching prior art has become increasingly complex. Searching patents across multiple languages, jurisdictions and technical disciplines to assess novelty or freedom to operate is extremely time-consuming. Appropriately trained AI can perform 'first pass' prior art searches. This frees professionals to focus on more complicated questions of invalidity and freedom to operate where more in-depth reviews are required.

How Clarivate helps

Rowan Patents, a part of Clarivate, automates routine patent drafting and prosecution processes using AI assistance. Its patent drafting software can accelerate drafting tasks and create standards for individual practitioners and their teams. The software enables efficient refinement and quick validation for reused patent elements. Its integrated drawing tools allow practitioners to create figures synced to specifications and claims.

Derwent Innovation™ AI Search can quickly deliver relevant results for 'first pass' prior art knockout and patentability searches in seconds. It is trained on DWPI™, a database of over 65 million invention abstracts written by subject matter experts, greatly enhancing the model's ability to understand the context of patents and find even more relevant records.

**Strategic portfolio
management and intelligence**

Managing large patent portfolios and
extracting critical insights from these
assets, amid shifting technological
and competitive landscapes, requires
the analysis of extensive data sets — a
complex and time-consuming process.
Sophisticated AI tools can quickly
analyze large data sets and provide
actionable intelligence to help manage,
defend and enforce patent rights.

These tools can assist with portfolio
benchmarking and categorizing
competitors' patents into relevant
technology groupings to provide
an accurate and contextual view
of a company's position. This also
helps stakeholders view the patent
landscape through their company's
lens to better understand where to
focus innovation and filing efforts.

5K

patents classified in
less than 10 minutes.

**Sophisticated
AI tools can
quickly analyze
large data sets**

How Clarivate helps

Innography™ AI Classifier for portfolio benchmarking uses advanced
large language model (LLM) technology trained on proprietary Derwent
World Patents Index™ data. Patent sets that manually take nine weeks
to classify now take nine minutes with up to 95% accuracy.

02
Trademark research and protection

Establishing, securing and protecting trademark rights is crucial for maintaining a strong brand presence in the marketplace. AI can play an important role in improving processes throughout the trademark lifecycle.

New brand risk assessment

In today's global marketplace, assessing the uniqueness of a proposed trademark is more complex than ever. With more than 110 million active trademarks registered globally[3], the task of analyzing trademark viability is both difficult and time-consuming.

AI purpose-built for trademark analysis and trained on large, global data sets can be extremely effective at assessing the similarity of a proposed brand against existing trademarks. These solutions provide predictive insights based on the analysis of millions of trademark case law records to identify highly contentious and high-risk areas. As a result, trademark practitioners can dramatically accelerate the process of identifying potentially high-risk marks, focusing on those with the greatest chance of successful registration.

Data quality and timeliness are critical for effective AI-powered brand analysis. Since new trademark cases are continually appearing, using real-time, error-checked data is crucial. AI tools must also be trained on regulations, standards and processes specific to each jurisdiction to avoid possible missteps. In addition, it must be scalable to analyze vast amounts of trademark data.

3 CompuMark SAEGIS – Sept. 30 2024

How Clarivate helps

Brand Landscape Analyzer provides cutting-edge predictive AI intelligence to support the trademark screening and clearance process. Trained with insight from Clarivate trademark experts and leveraging our industry-leading data — including unique Darts-ip™ case law data — it provides predictive scores to help inform critical brand decisions, mitigate risk and accelerate new brand development.

Trademark watching

Continuous trademark watching is essential for protecting brand rights. Yet, sifting through large volumes of watch results can be extremely time-consuming, taking trademark practitioners away from other critical brand IP tasks. AI can help by rapidly assessing watch results and flagging hits that pose the greatest potential threat to a brand.

Using a neural network trained on historical trademark matching data and a rules-based algorithm, AI can perform assessments similar to those of a human analyst but exponentially faster. It can help assess the potential success of filing an opposition against a third-party word mark, provide ranked results and filter out irrelevant hits. This allows trademark practitioners to focus their time and attention on hits with the greatest threat potential, improving productivity while reducing the risk of missing critical hits.

As with other IP processes, the AI tool must be trained using up-to-date, quality-checked data to ensure timely and reliable results.

AI can perform assessments similar to those of a human analyst but exponentially faster.

How Clarivate helps

Trademark Watch Analyzer provides AI-enabled global threat landscape assessment and watch result filtering. Using global trademark data and Darts-ip case law data, it generates an opposition strength score, gauging the potential success of filing an opposition. This enables practitioners to assess legal and commercial risk. Trademark Watch Analyzer provides greater insight into the trademark landscape, helping professionals make more informed decisions regarding opposition strategies quickly and easily.

03
Automation and routine task management

Properly trained AI can automate a range of IP tasks and provide insightful answers to technical and legal IP questions. Integrated within IP management software (IPMS), AI can:

Simplify portfolio management

AI can automate repetitive administrative tasks, such as generating routine reports, matching Patent and Trademark Office (PTO) records and entering information into standard forms.

Provide reliable answers

AI chatbots can provide clear and high-fidelity answers with cited source links based on official public sources, curated internal databases and custom IPMS content like customer FAQs and knowledgebases, integrated with connected tools like Document Management Systems (DMS) and Search platforms. These chatbots harness the collective knowledge and data held within the IP team to allow users to self-serve.

It is critical to remember that AI tools that rely on publicly sourced data may not provide reliable answers.

How Clarivate helps

Clarivate IP Chatbot delivers a personalized user experience, automating a range of tasks, and offering quick and insightful responses to IP-related questions. Integrated with select Clarivate IPMS solutions, it augments an organization's capacity through GenAI trained on industry-leading datasets. Non-IP colleagues can self-serve their requests, reducing reliance on IP staff, while IP teams can automate routine tasks allowing IP Managers and attorneys to focus on more strategic initiatives.

Navigate AI with confidence

Three decades ago, organizations debated how the internet would impact their businesses. Today, the Internet is ubiquitous. AI is following a similar path. Rapid advancements in AI technology are positively influencing a range of industry sectors, from healthcare and finance to manufacturing and consumer services. The IP industry is no exception.

This paper has explored how AI is already applied to numerous IP use cases, offering significant productivity gains for those who adopt it. We have also reviewed the key to successful AI implementation for reliable results — quality data, expert training and a responsible approach to development and deployment.

Adopting AI does not require massive change management. Instead, IP practitioners can use AI that integrates seamlessly into their established tools, delivering real-world efficiency gains and decision support without disruption. This practical approach to AI implementation can help corporate and legal IP teams realize the benefits of AI today.

As a leader in AI development for IP, Clarivate is ready to help corporate and law firm IP teams fully utilize this powerful technology. We invite you to learn more about the AI-powered products and services that benefit from our industry-leading IP data and expertise.

Contact our team today.

About Clarivate

Clarivate is a leading global information services provider. We help people and organizations think forward by connecting them to intelligence they can trust to transform their perspective, their work and our world. We are the partner law firms and companies rely on to transform the way they create, manage and protect intellectual property. Our comprehensive intellectual property data, software and expertise helps companies drive innovation, law firms achieve practice excellence, and organizations worldwide effectively manage and protect critical IP assets. Clarivate is home to Derwent Innovation™, CompuMark™, Innography™, Darts-ip™, IPfolio™, FoundationIP ™, Rowan Patents and other leading IP solutions.

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